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Filial Obligation across Generations and Implications for Parental Psychological Well-Being

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Dedication

For Shang-Te and my family

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Filial Obligation across Generations and Implications for Parental Psychological Well-Being

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Adult offspring provide support for their older parents for a variety of reasons. Research has documented how relationship quality, reciprocity of support, and parental needs are associated with adults' support for their parents. However, adult offspring also help their parents because they believe they should do so. Based on the Family Exchanges Study Wave 2 (FES2) data, this dissertation examined the sense of filial obligation, a family norm that individuals should help their older parents in times of need. The first study investigated the associations of individuals' sense of filial obligation across three generations. This study explored possible factors associated with family members' transmission of filial obligation. Findings revealed that grandparents' sense of filial obligation was associated with that of middle-aged parents. Young adults reported a stronger sense of filial obligation when their parents socialized more frequently with grandparents. The second study investigated whether adult offspring's filial obligation contributed to their appraisals when helping older parents and parental well-being. The role of frequency of support was also investigated. The results indicated that adult offspring's stronger sense of filial obligation was associated with less stressful and more rewarding

feelings in helping older parents. Furthermore, offspring's lower stress was associated with less parental depression. In contrast, offspring's filial beliefs were also associated with more frequent support which was associated with more stress and more parental depression. This dissertation contributes to the literature by integrating the understanding of filial obligation with multiple family members, offspring's feelings about support, and parental well-being. The findings also informed the importance of including reports from multiple generations and family members in studies regarding intergenerational support.

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Chapter 1: Transmission of Filial Obligation across Generations

Adult offspring are one of the main sources of care for older parents (Wolff & Kasper, 2006). Offspring are more likely to support their older parents when they have a stronger sense of filial obligation (Cooney & Dykstra, 2011; Lowenstein & Daatland, 2006; Silverstein, Gans, & Yang, 2006). Filial obligation is a family norm and a socialized expectation that individuals should help their older parents in times of need (Blieszner, 2006; Cicirelli, 1990; Gans & Silverstein, 2006; Lowenstein & Daatland, 2006; Seelbach & Sauer, 1977). Although a sense of filial obligation may be acquired in the family context, the ways that individuals obtain this sense in the family are unclear.

This study investigated the transmission of the sense of filial obligation across generations. First, I asked whether older generations' beliefs about filial obligation were associated with younger generations' beliefs about filial obligation within the same family. Although filial obligation beliefs would seem to be important across generations, the transmission of filial obligation has not been examined across multiple generations. I then asked whether the younger generations' sense of filial obligation is conveyed through observational learning of parental behaviors. That is, whether the support parents provided to grandparents is associated with grandchildren's sense of filial obligation. Finally, I investigated whether third factors might explain shared family beliefs about obligation including culture (e.g., race) and gender socialization (e.g., being female). Standard nomenclature in social sciences was used to indicate the grandparents'

generation as G1, the middle-aged parents' generation as G2, and the young adult offspring as G3.

FILIAL OBLIGATION IN ADULT FAMILIES

A sense of filial obligation motivates offspring to support their older parents (Kohli & Kunemund, 2003; Silverstein et al., 2006). Because filial obligation is a family norm which is not a personal preference (Blieszner, 2006; Cicirelli, 1990), individuals who feel obligated to help their older parents may not necessarily want to do so. Just as proposed by the commitment framework (Johnson, 1999; Johnson, Caughlin, & Huston, 1999), adult offspring's commitment or motivations to help their older parents can be categorized as wanting to help (personal commitment, such as relationship quality), ought to help (moral commitment, such as obligation), and having to help (structural commitment, such as availability of public welfare). The three types of commitment do not belong to the same factor (Johnson et al., 1999). Adult offspring who have a strong sense of filial obligation do not need to have quality relationships with or want to help their parents.

Filial obligation may play a key role in motivating adult offspring to support their older parents. The Western pattern of intergenerational support usually flows from the older generation to the younger generation (Fingerman, Pitzer, et al., 2011; Grundy & Henretta, 2006). The intergenerational stake hypothesis also suggests that parents are more emotionally invested in their adult offspring than their offspring feel for them (Fingerman, 2001; Giarrusso, Stallings, & Bengtson, 1995; Shapiro, 2004). Yet, a large

proportion of support for older parents in need comes from their middle-aged offspring (Pinquart & Sörensen, 2011; Roberto & Jarrott, 2008; Wolff & Kasper, 2006). Thus, filial obligation, the belief that offspring should offer support to older parents, may serve as a key motivator to provide support for parents. Parents may socialize their children with a sense of filial obligation to ensure support from adult children in old age (Becker, 1993; Silverstein, Conroy, & Gans, 2012).

INTERGENERATIONAL TRANSMISSION OF FILIAL OBLIGATION

Older generations may desire to pass the belief of filial obligation to their children because it benefits parents late in life. Researchers have considered that the sense of filial obligation is acquired through the process of socialization in the family (Cicirelli, 1993; Rossi & Rossi, 1990; Silverstein et al., 2012). Silverstein and colleagues (2012) have further explained that the socialization of filial obligation is based on the accumulation of "moral capital." Similar to the investment of education as children's human capital, parents invest in the moral capital of their children. Moral capital can be developed via parents' emphasis on merits of specific values and parental behaviors. This study examined whether generations share filial obligation values and if so, whether observational learning plays a role in such shared values.

Transmission of family values

Parents may pass a sense of filial obligation to the younger generation through the delivery of family values. Family systems theory maintains that family members interact and communicate with each other. These interactions include sharing thoughts and

attitudes that transfer to younger generations (Bowen, 1993; Fingerman & Bermann, 2000; Kerr & Bowen, 1988). Birditt and colleagues applied family systems theory and found the transmission of relationship quality across three generations (Birditt, Tighe, Fingerman, & Zarit, 2012). It is possible that similar family processes result in the transmission of family beliefs to younger generations.

Indeed, empirical studies have found that family beliefs, such as children's obligations toward family members and maintaining harmony within the family, are associated among family members. Since younger and older generations in the family harbor similar family beliefs, filial obligation, a family belief, may also be shared across generations (De Vries, Kalmijn, & Liefbroer, 2009; Ribar & Wilhelm, 2006; Sabatier & Lannegrand-Willems, 2005). However, prior studies did not specifically measure the transmission of filial obligation across more than two generations.

This study hypothesized that family members share a sense of obligation to assist aging parents across three generations. Parents (G2) may have a stronger sense of filial obligation when grandparents (G1) report a stronger sense of filial obligation. Young adults (G3) with a stronger sense of filial obligation may also have parents (G2) with a stronger sense of filial obligation. Furthermore, across three generations, young adults' (G3) sense of filial obligation may be associated with both their parents' (G2) and grandparents' (G1) sense of filial obligation.

Observational learning of parental behaviors

One way to transmit a sense of filial obligation to the younger generation is through the observational learning of parental behaviors. Observational learning indicates that individuals learn through examples or other people's behaviors (Bandura, 1982). Social learning theory (Bandura, 1977, 1982) emphasizes that observational learning is an effective way to transmit behaviors and attitudes from parents to their children (Amato, 1996; Farré & Vella, 2013; Kovan, Chung, & Sroufe, 2009).

In terms of intergenerational support, economists have found evidence for the "demonstration effect." Consistent with social learning theory, this effect suggests that parents teach their children to support the older generation by helping their own parents (Cox & Stark, 1996; Jellal & Wolff, 2000). That is, parents "demonstrate" that they support their own aging parents for their children. Indeed, middle-aged adults who supported their parents are more likely to be supported by their own children in the future (Jellal & Wolff, 2002). Similarly, the younger generation may acquire a sense of filial obligation when seeing their parents help grandparents.

Moreover, the types of support that are easier to observe may be associated with adult offspring's stronger sense of obligation toward that type of support (Jallal & Wolff, 2002). Based on observational learning, younger generations witness the provision of support from their parents to grandparents to learn a sense of filial obligation. Financial support may not be a good target for such a learning process. By contrast, parental in-kind support to grandparents, such as listening, giving advice, socializing, and offering

emotional and practical support, are likely to inculcate a sense of filial obligation in their adult offspring if their offspring observe these behaviors (Jallal & Wolff, 2002). From a Mexican-American sample, Ribar and Wilhelm (2006) found that young adult sons tend to agree with coresiding with older parents when their parents lived with their grandparents. However, adult offspring did not report that they felt responsible for parental financial needs when their parents gave grandparents regular financial help, perhaps because they could not observe their parents providing that money to the grandparents. In addition to financial support, however, the literature has not specified whether one type of non-monetary support is easier to observe than another type of non-monetary support. Therefore, this study investigated different types of support separately but did not have specific hypotheses for each type of support.

In sum, this study examined the transmission of filial obligation across three generations through both shared family values and parents' (G2) support behaviors. To determine whether family patterns reflect transmission of family values I examined whether (a) grandparents' (G1) higher sense of filial obligation is associated with middle-aged parents' (G2) higher sense of filial obligation; (b) middle-aged parents' (G2) higher levels of filial obligation are associated with their young adult offspring's (G3) higher sense of filial obligation; and (c) whether young adults' (G3) stronger sense of filial obligation is associated with both parents' (G2) and grandparents' (G1) stronger filial obligation. To ascertain the possibility about observational learning, I examined whether middle-aged parents' (G2) more frequent support to grandparents (G1) is associated with

young adult offspring's (G3) higher sense of filial obligation across different types of support.

FACTORS MODERATING THE TRANSMISSION OF FILIAL OBLIGATION

The transmission of filial obligation beliefs also may be shaped by other factors, such as shared culture or shared socialization. These shared experiences may enhance or detract from the likelihood of transmission of filial obligation beliefs.

A vast literature shows that beliefs about filial obligation to assist aging parents differ cross-nationally (Cooney & Dykstra, 2011; Kim, Cheng, Zarit, & Fingerman, 2015; Lowenstein & Daatland, 2006). Similarly, within the U.S., different ethnic groups vary in their beliefs about filial obligation (Becker, Beyene, Newsom, & Mayen, 2003; Fingerman, VanderDrift, Dotterer, Birditt, & Zarit, 2011; Sörensen & Pinquart, 2005). Families from cultural or ethnic backgrounds that share a stronger belief about filial obligation to help parents may be at an advantage in the transmission of these beliefs. If these beliefs are strongly endorsed within a culture, family members may discuss the beliefs and manifest the behaviors more frequently, thus facilitating transmission of the beliefs.

Similarly, structural factors such as gender may play a role in the transmission of filial obligation beliefs. Women typically carry the burden of helping family members (Laditka & Laditka, 2001), and as I discuss later, mothers and daughters may be more likely to share these beliefs. Thus, I considered the moderating roles of: (a) race, and (b) gender in family transmission of filial obligation.

Differences in transmission of filial obligation by race

Black and White families may differ in the transmission of filial obligation. Although researchers have examined racial differences in support to aging parents with mixed results, the findings generally suggest Black offspring provide more support to aging parents than White offspring do (Suitor, Sechrist, Gilligan, & Pillemer, 2011). Laditka and Laditka (2001) found that Black daughters provide more hours of support than White adult children. However, support from Black sons was less common than White sons. Another study found racial differences across different types of support. Black adult offspring were more involved in practical support whereas White offspring gave more financial and emotional support (Sarkisian & Gerstel, 2004). Still another study found that compared to White offspring, Black offspring provided more of all types of support to aging parents except for listening to them talk about their daily lives (Fingerman, VanderDrift, et al., 2011). Researchers have suggested that racial differences in support patterns may be contingent on other factors such as socioeconomic status, thus accounting for lack of consistency in findings regarding race (Sarkisian & Gerstel, 2004; Swartz, 2009). By contrast, findings regarding racial differences in filial beliefs appear to be more consistent.

Black participants tend to possess a stronger sense of filial obligation than White participants. Older Black adults reported higher levels of filial obligation than older White adults (Burr & Mutchler, 1999; Lee, Peek, & Coward, 1998). A meta-analysis concluded that Black family caregivers report higher levels of filial obligation than White

caregivers (Sörensen & Pinquart, 2005). In one study, Black adults' higher sense of filial obligation explained why middle-aged Black adults provided more frequent everyday support to their older parents than White adults (Fingerman, VanderDrift, et al., 2011).

It is possible that the sense of filial obligation is a relatively more important family belief among Black adults than White adults. If the sense of filial obligation is transmitted across generations, this transmission may be more salient in Black families than in White families. I hypothesized that race may moderate the transmission of filial obligation. In Black families, the strength of association between family members' filial obligation beliefs may be stronger than in White families.

Differences in transmission of filial obligation by gender

Gender may serve as another moderator of the transmission of filial obligation. Mothers may be more likely to pass a sense of filial obligation to their daughters than other parent-child ties. The mother-daughter relationship is considered the closest tie in the family (Fingerman, 2001; Suitor & Pillemer, 2006; Umberson & Slaten, 2000). Because older mothers prefer support from their daughters (Suitor, Gilligan, & Pillemer, 2013; Suitor & Pillemer, 2006), they may be more motivated to pass a sense of filial obligation to their daughters than to their sons.

Evidence suggests that women's transmission of filial obligation beliefs is strong. A study conducted in France has documented the transmission of beliefs among mothers and daughter (Sabatier & Lannegrand-Willems, 2005). Researchers also argue that mothers have a stronger incentive to employ the demonstration effect with their daughters

(Cox & Stark, 1996; Mitrutt & Wolff, 2009). Women have longer life expectancies than men and are more likely to require support from their adult offspring. Therefore, Cox and Stark (1996) suggested that inducing offspring's sense of filial obligation may be more important for mothers than for fathers. From adult offspring's perspective, adult daughters reported observing more frequent contact between their parents and grandparents than adult sons did (Mitrutt & Wolff, 2009). Therefore, I hypothesized that the transmission of a sense of filial obligation would be stronger for mother-daughter ties than for other parent-adult offspring ties.

Cultural transmission of filial obligation

I also considered a counter hypothesis—that within-family transmission does not account for shared family beliefs. Rather, it is possible that family members share beliefs about obligation due to third factors, such as their shared cultural heritage or shared socialization experiences. For example, Black families may share filial obligation beliefs, but these shared beliefs may reflect ethnic practices that endorse rewards of caring for parents and strong intergenerational ties (Burr & Mutchler, 1999; Fingerman, VanderDrift, et al., 2011), rather than direct family transmission, per se. Similarly, mothers and daughters may share a sense of filial obligation because they are both women (Roest, Dubas, & Gerris, 2010; Schwartz & Rubel, 2005) more so than because the mother transmitted her values to the daughter.

In sum, I considered two approaches to race and gender: (a) these factors moderate the transmission of filial obligation or (b) these factors explain what appear to

be within-family similarities in beliefs. I first examined whether race and gender moderate the association of filial obligation across generations. Then, I tested whether the associations of filial obligation across generations still hold between members with the same race or gender from different generations.

OTHER FACTORS ASSOCIATED WITH FILIAL OBLIGATION BELIEF

I controlled for other factors that may be associated with filial obligation or with parent/child ties in the family, including family members' background characteristics and frequency of support provided to parents. For example, individuals at different ages may possess different levels of filial obligation. Findings are scant, but suggest age is associated with filial obligation. Rossi and Rossi (1990) found a linear decline in filial obligation with age. Yet, another longitudinal study found that that the sense of filial obligation increases in young adulthood, peaks in middle age, and gradually declines in old age (Gans & Silverstein, 2006). Namely, middle-age adults would possess the highest sense of filial obligation while their older parents and adult offspring have a weaker sense of filial obligation. Thus, adult offspring's age and age squared term were controlled in the study (De Vries et al., 2009).

Filial obligation also may differ as a function of the parent who might receive that support. Parental characteristics such as income, health, and marital status are also likely to be associated with adult offspring's sense of filial obligation. Affluent parents may not need to instill a sense of filial obligation in their children. These parents can purchase services or may be in a position to find other sources for care when they need it. In

contrast, lower-income parents require assistance from their children and may seek to strengthen their children's beliefs about filial obligation (Becker, 1993; Silverstein et al., 2012). Therefore, higher parental income may be associated with offspring's lower levels of filial obligation. Moreover, parental needs such as poor health are associated with adult offspring's sense of filial obligation with offspring reporting a stronger sense of obligation when parents are less healthy (Ganong & Coleman, 2006; Silverstein et al., 2006). Parental marital disruption is also associated with adult offspring's sense of filial obligation. Adult offspring feel less responsible for divorced and step parents (Ganong & Coleman, 1998; Ganong & Coleman, 2006). Demographic characteristics of parents such as income, health, and marital status were controlled.

Finally, in the U.S., individuals who support their parents more frequently are likely to possess a higher level of filial obligation (Cooney & Dykstra, 2011; Silverstein et al., 2006). Cognitive dissonance theory suggests people may alter their beliefs to be consistent with their behaviors (Festinger, 1957), and in this case, family members may endorse stronger filial obligation when they actually provide more support. I controlled for support provided to parents, except in equations examining observational learning.

THE CURRENT STUDY

This study extended an understanding about the transmission of filial obligation across three generations. The study asked whether families share values of filial obligation across generations.

Hypothesis 1: Transmission of family values

The older generations' sense of filial obligation may be associated with that of the younger generations. Hypothesis 1 included three separate predictions:

Hypothesis 1a: Stronger grandparents' (G1) sense of filial obligation may be associated with stronger parents' (G2) sense of filial obligation.

Hypothesis 1b: Stronger parents' (G2) sense of filial obligation may be associated with stronger adult offspring' (G3) sense of filial obligation as well.

Hypothesis 1c: Grandparents' filial obligation beliefs may carry over to their grandchildren's filial obligation beliefs. That is, both grandparents' (G1) and parents' (G2) sense of filial obligation may be associated with adult offspring's (G3) sense of filial obligation.

Hypothesis 2: When parents (G2) provide more frequent support to grandparents (G1), offspring (G3) may report a stronger sense of filial obligation**.** This hypothesis also considered distinct types of support (e.g., emotional, practical, financial).

Hypothesis 3: The association between parental and offspring's sense of filial obligation may be stronger for Black families than for White families.

Hypothesis 4: The association between parental and offspring's sense of filial obligation may be stronger for mother-daughter ties than for other parent-adult offspring ties.

Methods

SAMPLE

The sample was from the Family Exchanges Study wave 2 (FES2) conducted in 2013. The Family Exchanges Study is a study of three generation families, including middle aged adults, their aging parents, and grown children. The current study was limited to families in which at least one member of each of the three generations participated in the second wave of data collection (FES2), and included members of those families who did participate. Thus, out of 1471 participants from three generations in FES2, 612 participants from 159 families were included.

The sample of FES2 was a follow up to the Family Exchanges Study wave 1 (FES1; Fingerman, Miller, Birditt, & Zarit, 2009; Fingerman, Pitzer, et al., 2011). The initial Family Exchanges Study (FES1) recruited middle-aged adults (G2) from the Philadelphia Primary Metropolitan Statistical Area (PMSA) as well as their family members. The middle-aged parents (G2) were first recruited using random digit dialing within regional area codes as well as purchased lists from Genyses Corporation in 2008. The selection criteria for participants included being aged within the range of 40 to 60 years, and having at least one older parent (G1) and adult offspring (G3) living. FES1 recruited 633 middle-aged participants (G2) with a response rate of 75%, which is comparable to similar studies (Grundy, 2005; Silverstein, Conroy, Wang, Giarrusso, & Bengtson, 2002; Suitor et al., 2013). Moreover, FES1 oversampled areas with high ethnic minority representation.

In the initial wave of data (FES1), G2 middle-aged participants provided contact information for their older parents (G1) and adult offspring (G3). Among 455 grandparents (G1) with contact information, 337 (74%) participated in the FES1 study. Among 792 adult offspring (G3), 592 (75%) participated in the FES1 study.

In 2013, the original study was expanded to a second wave of data collection. The Family Exchange Study wave 2 (FES2) recruited 490 returning middle-aged parents (G2; 56% women; mean age = 55.87) representing 77% of the original sample in the first wave (FES1). This recruitment rate is comparable to similar studies (Silverstein et al., 2002; Suitor et al., 2013). The Family Exchanges Study 2 also recruited older parents (G1) of the middle-aged participants (G2). In FES2, 241 grandparents (G1; 70% women; mean age = 80.12) participated. Regarding adult offspring (G3), 740 participated in the second wave of the Family Exchanges Study (56% women; mean age = 28.52). FES2 recruited returning adult offspring as well as other adult offspring who had previously been too young for the study, but had turned 18 by 2013. Of the FES2 offspring, 455 were returning while 285 were newly recruited.

I estimated chi square tests and t-tests to compare the sample in the current study to other participants in the Family Exchanges Study. First, I examined reasons for attrition and compared background characteristics of each generation in wave 2 to the initial sample in wave 1. The Family Exchanges Study also refreshed the sample at wave 2 by including additional grandparents (G1) and grown offspring (G3) who did not participate in wave 1. I compared these new participants to the other participants in wave

2. Finally, because the sample in the current study included only those participants who had all 3 generations participate in Family Exchanges Study 2, I estimated analyses comparing the participants in this subsample to the remaining sample in FES2.

FES2 comparisons to FES1

Among the original middle-aged G2 participants in the first wave, 14 (2%) did not participate due to death, 77 refused (12%) to participate, and 52 (21%) could not be reached. Compared to the first wave (FES1), the middle-aged parents who also joined the second wave (FES2) were older ($t(631) = -4.83$, $p < .001$), less likely to be men ($\chi^2(1) = 19.16$, $p < .001$), less likely to identify as an ethnic or racial minority ($\chi^2(1) = 40.62$, $p < .001$), and reported higher education ($t(631) = -3.03$, $p < .01$) and income ($t(607) = -6.89$, $p < .001$).

Among the 241 grandparents (G1) in Family Exchanges Study 2, 211 were returning from FES1. The response rate for returning grandparents was 63%. Reasons for attrition included death ($n = 58$, 17%), grandparents who were too ill to participate ($n = 5$, 1%), refused to participate or could not be reached ($n = 63$, 19%). Compared to the grandparents from FES1, the grandparents who also completed the FES2 were younger ($t(335) = 2.83$, $p < .01$) and had higher levels of education ($t(335) = 2.55$, $p < .05$).

Of the 740 FES2 offspring, 455 were returning from FES1. The response rate for the returning offspring was 77%. Reasons for attrition included death ($n = 4$, 1%), refused to participate or could not be reached ($n = 133$, 22%). Compared to adult offspring from FES1, returning offspring who also participated in FES2 were less likely to be men ($\chi^2(1)$

= 6.17, $p < .05$), minority ($\chi^2(1) = 11.05$, $p < .01$), and reported higher education ($t(589) = -2.72$, $p < .01$).

Comparisons of newly recruited grandparents (G1) and offspring (G3)

In FES2, 30 grandparents (G1) were newly recruited who had not previously participated in FES1 and 285 offspring (G3) were newly recruited. In FES2, newly recruited grandparents were not significantly different from the returning grandparents with regard to background characteristics (i.e., age, gender, minority status, education, and income).

In FES2, compared to the returning adult offspring, newly participating adult offspring were younger ($t(738) = 3.43$, $p < .001$), less likely to be a minority ($\chi^2(1) = 5.61$, $p < .05$), and reported lower education ($t(720) = 6.34$, $p < .001$). They did not differ from returning offspring with regard to gender and income.

Three generation families in FES2 compared to other participants

The sample for this study was further limited, however, to only those participants in the Family Exchanges Study 2 who also had members of the other two generations participated. This sample included at least one member from each generation, G1, G2, and G3. Furthermore, three of the three generation families were excluded because the family members identified as multiracial or Asian; this study only included participants who self-identified as Black or non-Hispanic White. The questions about filial obligation were only included for all three generations in Family Exchanges Study 2. Thus, this study only used data from FES2.

The final sample size in this study was 612 participants from 159 families. In these families, 29 families had both the grandfather and grandmother who participated, and 130 had only one grandparent who participated. Because so few families had two grandparents, I randomly chose one of the grandparents (G1) from the 29 families with two grandparents. Therefore, each family had only one grandparent (G1) in the analyses (n = 159). Each family had one middle-aged parent who participated (n = 159). Regarding offspring (n = 294), six families had four offspring, 25 families had three offspring, 67 had two offspring, and 61 had only one offspring who participated.

I considered whether participants in this study who had all three generations of the family participate differed from the remaining sample in the Family Exchanges Study 2 which did not have all three generations participate. Compared to the total FES2 sample of participants, grandparents (G1) included in this study did not differ with regard to background characteristics (i.e., age, gender, minority status, education, and income). Parents (G2) in this study were younger ($t(481) = 2.87$, $p < .01$) and reported higher income ($t(465) = -2.10$, $p < .05$). Adult offspring (G3) in this study were younger ($t(738) = 4.24$, $p < .001$). Detailed descriptive information regarding the sample is shown in Table 1.

PROCEDURE

Participants were first offered the opportunity to complete the survey via Computer Assisted Telephone Interview (CATI) in the second wave of the Family Exchanges Study (FES2). G2 and G3 participants who were not available to complete a telephone interview during the designated time window or who preferred a computer

format had the option of a web-based survey. Among middle-aged parents (G2) in this study, 146 (92%) completed the survey by phone, and 13 (8%) completed the web-based survey. For adult offspring (G3), 90 (31%) completed the survey by phone, and 204 (69%) completed the web-based survey. There were no significant differences in demographic characteristics between G2 and G3 participants who completed the survey by phone or via the internet in this sample.

To recruit grandparents (G1) who were not able to complete the interview by phone due to hearing impairments, a limited paper survey was used. Of the grandparent sample in this study, 157 (99%) completed the survey by phone, and 2 (1%) completed it via the paper option.

Each participant received $50 compensation for completing the survey. The phone interview lasted approximately 70 minutes, and the web-based survey took approximately 60 minutes. There is no information regarding length of time to complete the paper option.

MEASURES

Filial obligation

The key independent and dependent variable involved filial obligation. I examined how one generation's sense of filial obligation was associated with another generation's sense of filial obligation.

This measure tapped participants' sense of obligation to support older parents (Fingerman, VanderDrift, et al., 2011; Silverstein et al., 2006). Participants first heard the

stem sentence: This section focuses on people who are in midlife. Then, they indicated how often offspring should provide six types of support to parents: (a) socializing with parents, (b) listening to parents talk about their daily lives, (c) advice, (d) emotional support, (e) practical help, and (f) financial support; rated from 1 = *never* to 5 = *always*, α = .75, .82, and .80 for G1, G2, and G3 respectively. This study used the mean score of six items as well as individual items separately.

Frequency of support adult offspring provide to their parents

The frequency of support from adult offspring to their parents served as both independent and control variable. When testing the transmission of family values, both the frequency of support from middle-aged parents (G2) to grandparents (G1) and from young adults (G3) to middle-aged parents (G2) were control variables. In the model examining the observational learning of filial obligation, the frequency of support from middle-aged parents (G2) to grandparents (G1) was the independent variable. The support from young adults (G3) to middle-aged parents (G2) was a control variable.

Middle-aged parents (G2) and young adults (G3) reported how often they help their fathers or mothers with six types of support based on the *Intergenerational Support Index* (ISI; Cheng, Birditt, Zarit, & Fingerman, 2013; Fingerman et al., 2012). Six types of support included (a) socializing with parents, (b) listening to parents talk about their daily life, (c) advice, (d) emotional, (e) practical, and (f) financial support. The items were rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times a year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times a week*, and 8 = *daily*.

This study used the mean score across the six types of support as well as individual items. For parents (G2), α = .85; for adult offspring (G3) α = .89.

Factors moderating the transmission of filial obligation

Race

Participants' race was coded as 0 = *non-Hispanic White*, 1 = *Black.*

Gender

When treated as control variables, participants' gender was coded: 0 = *women*, 1 = *men*. To examine whether associations were stronger for mother-daughter ties, however, parents' and offspring's gender were further combined to create a categorical variable with 1 = *mother-daughter dyads*, 0 = *all other dyads*. In post-hoc tests, I also compared each type of dyad and recoded the specific types of dyads as 1 = *mother-son dyads*, 0 = *all other dyads*; 1 = *father-son dyads*, 0 = *all other dyads*; and 1 = *father-daughter dyads*, 0 = *all other dyads*.

Other factors associated with filial obligation belief

Adult offspring's (G2 and G3) age and the age-squared terms were included as control variables. Parental household income (G1 and G2) was rated 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = *$50,001-$60,000*, 6 = *$60,001-$75,000*, 7 = *$75,001-$100,000*, 8 = *$100,001-$125,000*, 9 = *$125,001-$150,000*, 10 = *$150,001-$200,000*, 11 = *$200,001-$250,000*, 12 = *$250,001 or more*. Parental self-reported health (G1 and G2) was rated from 1 = *poor* to 5 =

excellent (Fingerman, Chen, Hay, Cichy, & Lefkowitz, 2007; Idler & Kasl, 1991). Parental marital status (G1 and G2) was coded 0 = *other marital status*, 1 = *married.*

ANALYTIC STRATEGY

Hypothesis 1a examined whether parents' sense of filial obligation is associated with their adult offspring's filial obligation. This hypothesis involved predictions between grandparents (G1) and parents (G2; n = 159 for both samples). The analysis relied on ordinary least squares regression (OLS) with SAS Proc REG function (Littell, Stroup, & Freund, 2002). Parents' (G2) sense of filial obligation was regressed on grandparents' (G1) filial obligation. Control variables regarding G1 included their income, health, and marital status. Control variables about G2 included race, whether they are mother-daughter ties, age, age squared, and frequency of support provided to G1.

Hypothesis 1b considered associations of filial obligation between parents (G2; n = 159) and adult offspring (G3; n =294). Each family had only one G2 parent and up to four G3 children. Therefore, G2 constituted the family level while G3 were nested in G2. To deal with dependencies in the data, multilevel models (SAS Proc Mixed; Littell, Milliken, Stroup, & Wolfinger, 1996; Singer, 1998) were used for analyses with G3's filial obligation as the outcome. Multilevel models allow the estimation of shared variances within the same families (i.e., multiple offspring of the same parent) as well as variances between families. The multilevel model of hypothesis 1b treated G2's filial obligation as the independent variable and G3's filial obligation as the outcome. Control variables regarding G2 included their income, health, marital status, and race. Control

variables about G3 included whether they are mother-daughter ties, age, age squared, and frequency of support provided to G2. The equation for this model is listed below.

$$\text{G3 Obligation}_{ij} = b_0 + \boldsymbol{b_{1i}}\ \textbf{(G2 obligation)} + b_{2i}\,(\text{G2 income}) + b_{3i}\,(\text{G2 health}) + b_{4i}\,(\text{G2 married}) + b_{5i}\,(\text{race}) + b_{6ij}\,(\text{mother-daughter ties}) + b_{7ij}\,(\text{G3 age}) + b_{8ij}\,(\text{G3 age}^2) + b_{9ij}\,(\text{G3 support to G2}) + u_i + e_{ij}$$

In this model, *i* represents the upper family/parent (G2) level and *j* refers to the lower offspring (G3) level. G3 Obligation$_{ij}$ is the sense of filial obligation of offspring *j* from family *i*; b_0 represents the intercept which is the predicted value of G3 obligation when all of the predictors equal zero; b_{1i} represents the strength of association between G2 and G3 obligation. Coefficients of upper-level controls for family *i* are b_{2i} to b_{5i}; coefficients of lower-level control variables for offspring *j* in family *i* are b_{6ij} to b_{9ij}. Regarding variances, u_i is the between family variance while e_{ij} is the within family and random residual variance.

Hypothesis 1c anticipated that grandparents' filial obligation carries over to their grandchildren's filial obligation beliefs. To test this hypothesis, parents' (G2) and grandparents' (G1) filial obligation were included to predict offspring's (G3) filial obligation as the outcome. The multilevel model was similar to the model described in the previous paragraph except one additional independent variable (G1's filial obligation). Control variables were the same as the multilevel model in hypothesis 1b, as well as grandmother-granddaughter ties.

Hypothesis 2 pertained to the association between parents' (G2) provision of support to grandparents (G1) and adult offspring's (G3) filial obligation. This hypothesis pertains to the idea that offspring's (G3) observation of their parents' (G2) providing care to the older generation (G1) engenders beliefs about obligation to do so. To test this hypothesis, I used the basic multilevel model of hypothesis 1b with parents' (G2) support of the oldest generation (G1) as the independent variables. A total of seven models were examined. The youngest generation's (G3) filial obligation was treated as the outcome variable. One model included the parents' (G2) mean support provided to the grandparents (G1). For the other six models, G3's filial obligation regarding each type of support was an outcome with G2's matching type of support to G1 (listening, socializing, advice, emotional, practical, and financial support) treated as independent variables in each model respectively. Control variables were the same as the original hypothesis 1b multilevel model.

Finally, hypotheses 3 and 4 examined whether race and gender moderate the association of filial obligation across generations. To examine the moderation effect of race, each statistical model from hypothesis 1 and 2 was estimated again with the following additions. In each model, the reports of obligation were grand-mean centered. Then, race, obligation centered, and the interaction term (race × centered obligation) were included as independent variables. For example, G2's filial obligation was treated as the outcome and G1's filial obligation, race, and the interaction term (race × centered G1

obligation) were the independent variables. The model predicting G3's filial obligation with G2's obligation is as follow:

$$\text{G3 Obligation}_{ij} = b_0 + \boldsymbol{b_{1i}}\ \textbf{(centered G2 obligation)} + \boldsymbol{b_{2i}}\ \textbf{(race)} + \boldsymbol{b_{3i}}\ \textbf{(race} \times \textbf{centered G2 obligation)} + b_{4i}\ (\text{G2 income}) + b_{5i}\ (\text{G2 health}) + b_{6i}\ (\text{G2 married}) + b_{7ij}\ (\text{mother-daughter ties}) + b_{8ij}\ (\text{G3 age}) + b_{9ij}\ (\text{G3 age}^2) + b_{10ij}\ (\text{G3 support to G2}) + u_i + e_{ij}$$

This equation is based on the model of hypothesis 1b and also includes the centered filial obligation, race, and the interaction terms (coefficients are b_{1i} to b_{3i}).

Analyses were estimated in a similar manner for G3 filial obligation, predicted by G1 and G2 filial obligation, moderated by race. To test the moderation effect of the model predicting G3 filial obligation with both G1 and G2 filial obligation, centered G1 obligation and the interaction term (race × centered G1 obligation**)** were also included.

Finally, hypothesis 4 pertained to the moderation effect of gender. The analytic procedure was the same as hypothesis 3 but with gender as the moderator. Based on the hypothesis, I treated parent-adult offspring gender constellation as 1 = *mother-daughter ties* and 0 = *other ties* in estimating the moderation effect. Control variables in models of hypotheses 3 and 4 remained the same as the original models. In addition, post hoc tests examined the other possible parent/offspring gender combinations (e.g., father-son, father-daughter, and mother-son).

Results

I first examined the descriptive statistics for the variables in the analyses (Table 1) and bivariate associations (Table 2). Based on the distributions of variables, I proceeded to hypothesis testing.

INTERGENERATIONAL TRANSMISSION OF FILIAL OBLIGATION

Hypothesis 1a pertained to the association between grandparents' (G1) and parents' (G2) sense of filial obligation. The regression testing this hypothesis revealed the oldest generation's (G1) stronger sense of filial obligation was associated with parents' (G2) stronger filial obligation. Table 3 presents the findings.

Hypothesis 1b and 1c anticipated that both parents' (G2) and grandparents' (G1) stronger sense of filial obligation would be associated with adult offspring's (G3) stronger filial obligation. The multilevel models are found in Table 4. When predicting offspring's (G3) obligation with parents' (G2) filial obligation, the association was not significant. Similarly, in the multilevel model with both grandparents' (G1) and parents' (G2) filial obligation as independent variables, neither grandparents' (G1) nor parents' (G2) filial obligation was associated with that of offspring (G3).

Hypothesis 2 examined whether the frequency of support parents (G2) provided for grandparents (G1) was associated with offspring's (G3) stronger filial obligation. Using G3's filial obligation as the outcome, this multilevel model included the same control variables from hypothesis 1b and also included the parents' (G2) support to the grandparents (G1) as the independent variable. The model is found in Table 5. Findings

indicated that the overall mean support from the parents (G2) to the grandparents (G1) was not associated with the grandchildren's (G3) filial obligation beliefs.

In addition, analyses were estimated for each type of support. As can be seen in Table 5, no significant associations were evident between parental (G2) support of grandparents (G1) and grandchildren's (G3) filial obligation, with the exception of socializing or companionship. When parents (G2) socialized more frequently with the grandparents (G1), the grandchildren (G3) reported stronger filial obligation beliefs about the need to socialize with aging parents.

MODERATION OF FILIAL OBLIGATION TRANSMISSION BY RACE AND GENDER

Hypothesis 3 indicated that race would moderate the association of filial obligation across generations. As can be seen in Tables 6 and 7, race did not moderate the associations of filial obligation between G1 and G2, G2 and G3, or across three generations

Hypothesis 4 anticipated that mother-daughter ties moderated the association of filial obligation across generations. As can be seen in Tables 8 and 9, neither mother-daughter ties nor grandmother-granddaughter ties moderated the association of filial obligation across generations.

POST HOC ANALYSES

Sensitivity tests by culture

In addition to value transmission across generations, family members may share beliefs about filial obligation due third factors such as race or gender. Namely, the

associations of filial obligation across generations may appear between any two members across generations with the same race or gender. To examine these possibilities, the data were rearranged with (a) randomly paired members from the older and younger generations with the same race; and (b) randomly paired members from the older and younger generations with the same gender. If race or gender contribute to the associations of filial obligation across generations rather than family transmission per se, the filial obligation of rearranged participants would also be associated.

The procedure to randomize participants with the same race and gender was similar. Taking G1 and G2 women dyads as an example, women in G1 data (n = 128) and G2 data (n = 100) were first selected. Then, G2 women were randomly sorted and merged with the original sequence of G1 women data. The sample size of G1 and G2 women data set was 100 because there were only 100 G2 women to be paired with G1 data. The other dyads in the families in the study involved sons or fathers. The same procedure was applied to men. I also randomized dyads for Black, and White pairs. Datasets with G2 and G3 dyads followed the same procedure as well.

I examined whether the sense of filial obligation was associated between members of the G1 and G2 generations who shared the same race or the same gender. Using rearranged data sets, OLS regression models tested the association between G1's and G2's sense of filial obligation. Regardless of shared gender or race, the sense of filial obligation of G1 and G2 was not associated (See Appendix Table 1).

Between G2 and G3, it was also possible that the sense of filial obligation was associated between random members from each generation with the same race or gender. OLS regressions indicated that G2's and G3's sense of filial obligation was not associated regarding women, men, Black, or White data sets (See Appendix Table 2).

Parent-child dyads

To further understand the stability of gender effect, I tested the moderation effects of other parent-adult offspring ties. Mother-son, father-son, and father-daughter ties were tested as moderators of the transmission of filial obligation. As can be seen in Appendix Table 3, mother-son, father-son, and father-daughter ties did not moderate the association of filial obligation between grandparents (G1) and parents (G2).

Between G2 and G3, multilevel models were used to test the stability of gender effects other than mother-daughter ties. As can be seen in Appendix Table 4, father-daughter ties moderated the association of filial obligations between parents (G2) and offspring (G3). As shown in Appendix Figure 1, the association of filial obligation across generations for father-daughters was weaker (with a flatter slope) than other ties.

Discussion

This study explored the association of filial obligation across three generations and possible factors contributing to this association. Prior studies usually have focused on individuals' sense of filial obligation or the association of filial obligation between two generations (De Vries et al., 2009; Dykstra & Fokkema, 2012; Gans & Silverstein, 2006). By examining the association of filial obligation across three generations, this study

suggests that the association of filial obligation across generations depends on different situations. Filial obligation of grandparents (G1) and parents (G2) were associated. However, middle-aged parents' (G2) filial obligation was not associated with that of their adult offspring (G3). Furthermore, the association of filial obligation across generations was mainly evident in the family context. Non-family members who share similar cultural background and socialization experiences (e.g. same race or gender) did not share a sense of filial obligation.

Thus, this study further suggests that static characteristics of individuals (e.g. race and gender) do not shape the transmission of filial obligation. Rather, other aspects of interactions among family members may contribute more to the socialization of filial obligation across generations. Static demographic characteristics, such as mother-daughter ties and race, did not or weakly explained the strength of association of filial obligation across generations. Although I observed few demonstration effects associated with social learning, adult offspring felt more obligated to socialize with their parents when the parents socialized with grandparents more frequently.

INTERGENERATIONAL TRANSMISSION OF FILIAL OBLIGATION

This study only found the association of filial obligation between grandparents (G1) and middle-aged parents (G2), but not between middle-aged parents (G2) and their offspring (G3). Due to the possibility of health problems (Centers for Disease Control and Prevention, 2010), the situation regarding supporting older parents may be more common between older adults (G1) and their middle-aged offspring (G2) than younger

generations. Older adults even have preferences regarding which adult offspring to be their future caregivers (Suitor et al., 2013; Suitor & Pillemer, 2006). Therefore, the agreement about whether middle-aged adults should help their older parents is more likely in older age. In contrast, middle-aged parents (G2) may not have considered themselves as needing help. The agreement or discussion about intergenerational support may not have started between younger generations.

Observational learning did not contribute to adult offspring's sense of filial obligation much. Silverstein and colleagues (2012) pointed out that the socialization of social capital could be through direct discussion regarding the merits of particular orientations and by example. However, the evidence that adult offspring acquire a sense of filial obligation through parental example was weak. This study did not directly ask adult offspring (G3) the amount of support their parents (G2) provided to grandparents (G1). It is possible that observational learning occurs when offspring acknowledge their parents' support to grandparents.

Among different types of support, being involved in parental (G2) interactions with grandparents (G1) may be more important for younger adults (G3) to acquire a sense of filial obligation. After examining six different type of support from middle-aged parents (G2) to grandparents (G1), only socializing with grandparents was associated with offspring's (G3) sense of filial obligation. Financial support does not allow for observational learning of intergenerational support (Jalal & Wolff, 2002). Parents (G2) can even provide grandparents (G1) with emotional support and advice via phone calls

and without having adult offspring (G3) involved. In contrast, adult offspring (G3) may be involved in situations when their parents (G2) socialize with grandparents (G1).

FACTORS MODERATING THE TRANSMISSION OF FILIAL OBLIGATION

Differences in transmission of filial obligation by race

Race did not moderate the association of filial obligation across generations. Consistent with prior studies (Burr & Mutchler, 1999; Lee, Peek, & Coward, 1998), this study found that Black adults reported higher levels of filial obligation than White adults. However, the strength of the transmission of filial obligation across generations did not differ by race.

Differences in transmission of filial obligation by gender

Mothers' sense of filial obligation was not more strongly associated with their daughters' sense of filial obligation than sons. Mothers prefer support from their daughters (Suitor et al., 2013) and may have more frequent contact with their daughter (Mitrutt & Wolff, 2009). However, daughters' sense of filial obligation may not be a response of their mothers' socialization. Rather, Silverstein, Parrott, and Bengtson (1995) found that intergenerational affection most motivates adult daughters to help their older parents. Mother-daughter ties may be more characterized by mutual relationships rather than obligation.

Although mother-daughter ties did not have stronger associations of filial obligation, father-daughter ties did have weaker associations of filial obligation across generations. Older fathers usually have worse ties with adult offspring and receive less

support from adult offspring than mothers do (Silverstein et al., 2006; Silverstein & Giarrusso, 2010; Swartz, 2009). Moreover, studies of children's socialization find that fathers are typically more involved with sons than daughters (Lindsey & Caldera, 2006; Raley & Bianchi, 2006). Therefore, father's and daughters' sense of filial obligation may be the least likely to be associated with each other.

LIMITATIONS AND FUTURE DIRECTIONS

There are also limitations to this study. The design of this study did not measure the transmission of filial obligation directly. Therefore, the associations of filial obligation across generations is the closest proxy of filial obligation transmission. Although the analytic approach in this study was similar to prior studies regarding the transmission of values across generations (Albert & Ferring, 2012; Barni, Ranieri, & Scabini, 2012), further research which directly measures the transmission of filial obligation may be useful. For example, future measures could ask both adult offspring and their parents (a) whether parents discussed or insisted on the importance of filial obligation; and (b) whether parents anticipated or requested future support.

There are also limitations regarding the data and the sample used in this study. Family Exchanges Study 2 involves cross-sectional data. Although younger generations are less likely to socialize older generations with a sense of filial obligation, the current data still have limitations for causal conclusions. Longitudinal data investigating the process of how filial obligation is associated across generations would be necessary to more fully understand this topic.

Regarding the sample, parents (G2) and adult offspring (G3) in this study were younger than the participants not included. If the association of a sense of filial obligation is sensitive to age and younger generations are less likely to share filial obligation, this bias in the sample may explain the lack of association observed in the younger two generations (i.e., middle-aged parents (G2) and adult offspring (G3)). If the sample had included the full age range of midlife parents and grown offspring, perhaps an association regarding filial obligation could be observed. This study also included only Black and White families with three generations participating. The literature has found that Asian and Latino families especially emphasize familism and filial obligation (Knight & Sayegh, 2010; Ribar & Wilhelm, 2006). In these ethnic groups, the association between generations' views of filial obligation may be stronger.

In sum, this study suggested that the transmission of filial obligation across generations is more complicated than hypothesized. The pattern of filial obligation transmission was inconsistent across three generations. Only grandparents' (G1) stronger sense of filial obligation was associated with middle-aged parents' (G2) stronger filial obligation. Older parents who received support from their preferred adult offspring reported less depressive symptoms (Suitor, Gilligan, & Pillemer, 2012). Therefore, having adult offspring with the same level of filial obligation may ensure older adults to get desired support or not to receive unwanted help. To understand how a consensus of filial obligation is reached, future research may explore support expectations and communication between older adults and their middle-aged offspring regarding this topic.

For younger generations, young adults' sense of filial obligation may be developed through observing their parents interact with grandparents in ways this study did not capture. Future studies may focus on other aspects of adult offspring's observations of parental intergenerational support, which could contribute to offspring's sense of filial obligation.

Chapter 2: Offspring's Obligation to Provide Support and Appraisals of Support to Older Parents: Implications for Parental Depression

Social support can be beneficial or detrimental to the well-being of individuals (Thoits, 2011; Uchino, 2009). For older parents, their adult offspring are one of the main sources of support (Wolff & Kasper, 2006). In many situations, older adults benefit when receiving social support (Cheng, Li, Leung, & Chan, 2011; Newsom, Rook, Nishishiba, Sorkin, & Mahan, 2005; Uchino, 2009). Nevertheless, in other situations, older adults who receive support report diminished well-being (Davey & Eggebeen, 1998; Liang, Krause, & Bennett, 2001; Silverstein, Chen, & Heller, 1996). It is possible that the process through which adult offspring deliver the support plays a role in parental outcomes (Kohli & Kunemund, 2003). Specifically, offspring's motivations in helping their older parents and offspring's satisfaction or stress in providing support may contribute to parental well-being.

In particular, it is unclear how offspring's sense of obligation to assist aging parents may shape the offspring's experience of giving support. Many offspring are motivated to provide support to their older parents out of a sense of obligation or the belief that grown children are supposed to give such support (Bengtson, Giarrusso, Mabry, & Silverstein, 2002; Ikkink, van Tilburg, & Knipscheer, 1999; Schwarz, Trommsdorff, Albert, & Mayer, 2005; Silverstein, Gans, &Yang, 2006). Adult offspring's motivation or commitment in providing support may have consequences for

offspring's feelings about giving support (Cicirelli, 1993; Kohli & Kunemund, 2003; Merz, Consedine, Schulze, & Schuengel, 2009). Theoretically moral commitment is not associated with negative feelings (Johnson et al., 1999). But researchers actually find that feelings of obligation are associated negative components of relationships (Weigel, Davis, & Woodard, 2014). Furthermore, offspring's stronger sense of filial obligation was associated with their appraisals that providing intense support in the form of caregiving was stressful and arduous (Pinquart & Sörensen, 2005). These appraisals of stress and rewards in providing support may shape the way offspring deliver support, and in turn, their parents' well-being. Indeed, prior studies examining other types of interpersonal relationships have shown that the way a provider gives support is associated with the support recipient's psychological well-being (Lehman, Ellard, & Wortman, 1986; Maisel & Gable, 2009; Rafaeli & Gleason, 2009).

This study focused on offspring's sense of obligation to provide support to their aging parents, their appraisals of giving that support to their parents (i.e., how stressful and how rewarding they find helping their parents), and parental well-being. I also considered other factors that may be associated with these processes, including the amount of support that offspring provided.

OFFSPRING'S OBLIGATION TO SUPPORT OLDER PARENTS

Literature regarding intergenerational support has found multiple reasons why adult offspring support their older parents (Kohli & Kunemund, 2003; Katz et al., 2010; Silverstein et al., 2002). Based on the commitment framework (Johnson, 1999; Johnson

et al., 1999), adult offspring may "want to" help their parents because of quality relationships with older parents (Silverstein et al., 2002); feel they "ought to" help parents when having a strong sense of filial obligation (Gans & Silverstein, 2006; Silverstein et al., 2012). Finally, structural factors, such as few formal support system for older adults in the U.S., may make adult offspring feel they "have to" support older parents (Furstenberg, Hartnett, Kohli, & Zissimopoulos, 2015). Because three components of motivations are distinct factors, adult offspring who feel obligated or ought to help parents may not necessarily want to help (Johnson et al., 1999).

This study concentrated on adult offspring's sense of filial obligation to help their parents. Research has extensively examined how offspring's relationship qualities with parents are associated with parental well-being (Fingerman, Pitzer, Lefkowitz, Birditt, & Mroczek, 2008; Ryan & Willits, 2007; Umberson, 1992; Umberson, Crosnoe, & Reczek, 2010). When offspring give support out of love and affect, parents seem to benefit from receiving support from offspring (Lowenstein, 2007; Merz et al., 2009). Yet, offspring also give support because they feel obligated to do so (Cooney & Dykstra, 2011; Silverstein, Parrott, & Bengtson, 1995). The sense of filial obligation involves normative beliefs that adult offspring should provide help to their older parents in times of need (Blieszner, 2006; Cicirelli, 1990; Gans & Silverstein, 2006; Seelbach & Sauer, 1977). Indeed, adult offspring who have a stronger sense of filial obligation provide more support to their parents (Cooney & Dykstra, 2011; Silverstein et al., 2012).

OFFSPRING'S APPRAISALS OF SUPPORT

Offspring's motivations in providing support may be associated with how they feel about providing that support. Adult offspring's motivation to provide support is linked with their feelings of stress and reward when helping parents (Carpenter, 2001; Cicirelli, 1993; Rozario & DeRienzis, 2008).

Offspring's sense of filial obligation, which is a motivation to provide support, may also have implications regarding offspring's appraisals of support. In the context of intergenerational support, studies concerning filial obligation and offspring's appraisals of support have focused on caregiving. A stronger sense of filial obligation is associated with offspring caregivers perceiving greater stress (Cicirelli, 1993; Losada et al., 2010; Rozario & DeRienzis, 2008). Because everyday support is not as intense as caregiving, the association between offspring's sense of filial obligation and appraisals of support may still be present but milder.

Feeling greater obligation to provide support may be associated with more stress and fewer rewards giving that support. People who feel obligated to engage in a behavior also may find doing that behavior unpleasant. A variety of studies have found that individuals find it unpleasant to engage in behaviors that are involuntary rather than chosen. The perception that education is obligatory was associated with students' worse satisfaction with school life (Van Petegem, Aelterman, Rosseel, & Creemers, 2007). Moreover, older adults who perceived their retirement involuntary also reported worse life and retirement satisfaction than those who perceived their retirement voluntary

(Shultz, Morton, & Weckerle, 1998). Similarly, when grown children provide support to parents out of obligation, they may feel more stress and fewer rewards.

Alternatively, a stronger sense of filial obligation may be associated with offspring's feelings of less stress and more reward. Cognitive dissonance theory suggests that individuals prefer keeping their beliefs and behaviors consistent (Festinger, 1957). Based on this theory, feeling obligated to help parents and thus providing support should not be stressful. Nevertheless, young adults still consider obligation a negative component in relationships (Weigel et al., 2014). The negative feelings about obligation may be especially stressful regarding intergenerational support. Providing support to older parents consumes resources which may wear out positive feelings about filial obligation (Losada et al., 2010; Rozario & DeRienzis, 2008). This study hypothesized that offspring's stronger sense of filial obligation may be associated with more stress and fewer rewards in helping their older parents.

FILIAL OBLIGATION, APPRAISALS OF SUPPORT, AND PARENTAL WELL-BEING

Offspring's experiences in providing support may further be associated with the parents' well-being. Few studies have investigated the association between offspring's sense of filial obligation and parental well-being. Yet, parents' well-being may be associated with offspring's appraisal of providing that support. Research regarding caregiving usually has focused on caregivers' stress from providing assistance and their own depression (Pinquart & Sörensen, 2003, 2005; Zarit, Femia, Kim, & Whitlatch, 2010). Nevertheless, when offspring experience stress in providing support, their stress

may alter the way they deliver the support, which in turn increases their parental depression. That is, offspring's sense of filial obligation may be associated with parental outcomes indirectly through offspring's stress (and lack of rewards) in providing help.

As such, offspring's appraisals of support may be associated with parental psychological well-being. In social support situations, support recipients react to the way the support is given (Fingerman et al., 2013; Rafaeli & Gleason, 2009; Uchino, 2009). Among college students, support recipients reported more gratitude towards those who helped them with higher level of thoughtfulness, but were less grateful for those who helped them with lower levels of thoughtfulness (Algoe, Haidt, & Gable, 2008). Between romantic partners, when the support was provided with respect and understanding, support recipients reported better psychological well-being (Maisel & Gable, 2009). In the context of intergenerational support, I hypothesized that when adult offspring find it stressful to help their older parents, parental psychological well-being may be worse. When offspring report that it is more rewarding to help parents, parents would report better psychological well-being (See Figure 1).

OTHER FACTORS ASSOCIATED WITH PARENTAL PSYCHOLOGICAL OUTCOMES

Frequency of support offspring provide for their older parents

This study also focused on factors that may be associated with offspring's experiences in providing support, with particular attention to the amount of support offspring provide. The amount of support adult offspring provide to their older parents

may be associated with offspring's sense of filial obligation, their appraisals of support, and the parent's well-being. Adult offspring with a stronger sense of filial obligation provide more support to their parents (Silverstein et al., 2006; Cooney & Dykstra, 2011). Furthermore, studies suggest the levels of care adult offspring provide are associated with their appraisals of support and their sense of caregiving burden (Lawton, Rajagopal, Brody, & Kleban, 1992; Pinquart & Sörensen, 2003; Zarit et al., 2010). In the context of everyday support, the obligation to help older parents may be associated with more frequent offspring support, which in turn may be associated with how adult offspring feel about the help they provide to their parents.

The amount of support adult offspring provide to their older parents also may be associated with parental well-being. When offspring provide more support, parents report either poorer or better well-being based on different studies (Liang et al., 2001; Newsom et al., 2005; Uchino, 2009). Therefore, I included the frequency of support in all models.

Other control variables

Other factors also may be associated with offspring's appraisals of support and parental well-being. Offspring who are more depressed may have older parents who report higher levels of depression (Goodman et al., 2011; Weissman et al., 2006). Middle-aged parents also reported worse psychological well-being when any of their adult offspring reported personal crises including psychological problems (Fingerman, Cheng, Birditt, & Zarit, 2011). Likewise, offspring's depression may be associated with

their older parents' depression. This study controlled for offspring's self-reported depression.

Parental needs also may be associated with offspring's appraisals of support as well as parental outcomes. When parents are in poor health or suffer functional disabilities, offspring provide greater everyday support (Eggebeen & Davey, 1998; Grundy, 2005; Katz, Gur-Yaish, & Lowenstein, 2010). The level of older parents' physical impairment is associated with offspring's caregiving burden (Pinquart & Sörensen, 2003). Furthermore, older adults with poorer physical health tend to have worse psychological well-being (Cole & Dendukuri, 2003; Geerlings, Beekman, Deeg, & Van Tilburg, 2000; Vink, Aartsen, & Schoevers, 2008).

I also controlled for demographic factors, such as offspring's gender, minority status, and parental education. Daughters and sons differ in their motivations to support older parents. One study found that daughters helped their parents when they had better quality relationships, while sons provided support out of a sense of filial obligation (Silverstein et al., 1995). Different motivations in helping parents may have implications for offspring appraisals of support and parental well-being. Black and White adult offspring also may differ in their frequency and appraisals of support for their older parents. Compared to White adults, Black adults not only have a stronger sense of filial obligation but also find it more rewarding to help their older parents (Fingerman, VanderDrift, et al., 2011; Sarkisian & Gerstel, 2004). This study controlled for both offspring's gender and race because they may be associated with the overall level of

obligation or appraisals of support. Parental sociodemographic factors such as education are associated with their well-being (Farmer & Ferraro, 2005; Larson, 1978). This study controlled for parental education but not age. Parents who are older tend to report worse health, which has been controlled in this study (Centers for Disease Control and Prevention, 2010).

THE CURRENT STUDY

The hypotheses were as follows. In all analyses, I considered the role of frequency of support.

Hypothesis 1a: Offspring who report more obligation to help their parents may experience more stress in providing parental support.

Hypothesis 1b: Offspring who report more obligation to help their parents may experience fewer rewards in providing parental support.

Hypothesis 2a: When offspring find it rewarding to support their older parents, parents may report less depression.

Hypothesis 2b. When offspring find it stressful to support their older parents, parents may report more depression.

I tested the above hypotheses and also considered a model integrating these ideas. That is, offspring's sense of obligation may be associated with their feelings of reward and stress when helping parents. Offspring's greater feelings of reward and stress when helping their older parents may further be associated with parental well-being. In addition, offspring's frequency of support may mediate the association between their

filial obligation and appraisals of support. Figure 1 represents the theoretical model that links offspring's obligation to help their older parents, appraisals of support, and parental well-being.

METHODS

SAMPLE

This study included 189 middle-aged offspring (60% women; mean age = 54.68) and 221 of their older parents (72% women; mean age = 80.17). The data were drawn from the Family Exchanges Study 2 (FES2), which was collected in 2013. The Family Exchanges Study is a study of three generations of family members, including middle aged adults, their aging parents, and adult offspring. This study was limited to families with one middle-aged adult and at least one of their older parents participated in the second wave of data collection (FES2).

The sample of FES2 was a follow up of the Family Exchange Study wave 1 (FES1; Fingerman et al., 2009; Fingerman, Pitzer et al., 2011). In 2008, middle-aged adults from the Philadelphia Primary Metropolitan Statistical Area (PMSA) as well as their family members participated in the initial Family Exchanges Study (FES1). The middle-aged adults were recruited using random digit dialing within regional area codes as well as purchased lists from Genyses Corporation. The selection criteria for the middle aged participants were (a) aged 40 to 60 years and (b) having at least one living parent and one adult offspring. FES1 oversampled areas with high ethnic minority representation and recruited 633 middle-aged adults with a response rate of 75%. In

comparison to the U.S. population, the participants in FES1 included a higher proportion of African American adults and were slightly higher in educational attainment (U. S. Census Bureau, 2008). At the end of the interview, these middle-aged participants provided contact information for 455 of their older parents. Among the parents with contact information, 337 (74%) also participated in FES1. The recruitment rates are comparable to similar studies (Grundy, 2005; Silverstein et al., 2002; Suitor et al., 2013).

In 2013, the original study was expanded to a second wave of data collection (Family Exchanges Study 2, FES2). FES2 included 490 of the original middle-aged adults (56% women; mean age = 55.87) representing 77% of the original sample in the first wave (FES1). Among the original 633 middle-aged participants in the first wave (FES1), 14 (2%) did not participate due to death, 77 refused (12%) to participate, and 52 (21%) could not be reached. This recruitment rate is comparable to similar studies (Silverstein et al., 2002; Suitor et al., 2013).

I limited the study to offspring who had at least one parent participate. Compared to the middle-aged adults in the FES2 sample who did not have a living parent or whose parents did not participate in the study (n = 301), middle-aged adults who were included in this study (n = 189) were younger (t (481) = 4.28, p < .001). Other demographic characteristics of the middle-aged adults were similar.

Parents of the middle-aged adults were also contacted to participate in FES2. Among the 241 parents who participated in FES2 (70% women; mean age = 80.12), 211 were returning participants who also participated in FES1, and 30 were new participants

in FES2 only. The response rate for returning parents was 63% of the initial 377 parents who participated in FES1. Reasons for attrition included death (n = 58, 17%), parents who were too ill to participate (n = 5, 1%), refused to participate or could not be reached (n = 63, 19%). I excluded 20 parents from this study because their middle-aged child did not participate. Compared to the parents who were excluded (n = 20), the demographic characteristics of the 221 parents in this study were similar.

Among the 189 middle-aged offspring, 157 (83%) had one parent who participated and 32 (17%) had both parents who participated. Detailed descriptive information is shown in Table 10.

PROCEDURE

FES2 offered the survey via Computer Assisted Telephone Interview (CATI) and the option of a web-based survey was also available for the middle-aged adults (but not for the aging parents). For the middle-aged adults in the study, 166 (88%) participants completed the survey by phone, and 23 (12%) completed it via the web-based survey. The phone interview lasted approximately 70 minutes, and the web-based survey took approximately 60 minutes. There were no differences in demographic characteristics between participants who completed the survey by phone and via the internet.

To recruit the few parents who were unable to complete the survey by phone due to hearing impairments, a limited paper survey was also used. Among the parents in this study, 217 (98%) completed the survey by phone, and 4 (2%) completed it via the paper

and pencil option. There is no information regarding length of time to complete the paper option.

MEASURES

Offspring filial obligation

This measure tapped middle-aged offspring's obligation to support older parents (Fingerman, VanderDrift, et al., 2011; Silverstein et al., 2006). Adult offspring first heard the stem sentence: This section focuses on people who are in midlife. Then, they indicated how often offspring should provide each type of support to parents, including (a) socializing with parents, (b) listening to parents talk about daily lives, (c) advice, (d) emotional, (e) practical, and (f) financial support; rated from 1 = *never* to 5 = *always*, α = .77. The mean scores of six items were calculated into a composite score.

Offspring appraisals of support

Offspring reported how (a) stressful and (b) rewarding they find it to help each parent separately (Fingerman, VanderDrift, et al., 2011). Both items were rated from 1 = *not at all* to 5 = *a great deal*.

Parental depression

Parents responded to five items of the brief symptom inventory depression subscale (BSI; Derogatis & Melisaratos, 1983). This scale measures depression symptoms commonly observed in everyday settings with six items, rated from 1 = *not at all* to 5 = *extremely*. The mean scores were calculated as a composite score; α = .82.

Offspring frequency of support

The frequency of support that adult offspring provided their parents was based on the *Intergenerational Support Index*; including listening to talk about daily life, emotional support, companionship, advice, practical, and financial support (Fingerman, Pitzer, et al., 2011). This study used the mean score of six types of support offspring provided, rated from 1 = *less than once a year or never* to 8 = *daily*; α = .87.

Control variables

Items regarding offspring's self-reported depression were the same as that of parental depression (BSI; Derogatis & Melisaratos, 1983). The mean scores of five items were used, α = .87. The gender of offspring was coded 0 = *women*; 1 = *men*. Offspring's minority status was coded 0 = *non-Hispanic White*, 1 = *minority*. Moreover, parents rated their own health from 1 = *poor* to 5 = *excellent* (Fingerman et al., 2006; Idler & Kasl, 1991). Parents also reported years of education they have received (Fingerman et al., 2012).

ANALYTIC STRATEGY

In this study, 32 sets of parents came from the same family/offspring. The grown children gave a global rating of obligation, but rated the stress and rewards of providing support to each parent separately (i.e., how stressful to help your mother, how stressful to help your father).

For hypotheses 1a and 1b, I estimated two multilevel models (SAS Proc Mixed; Littell et al., 1996; Singer, 1998). The outcomes were offspring's ratings of stress or reward in providing help to each parent. The predictor was offspring's global rating of

obligation to help parents. Control variables included offspring depression, gender, and minority status. I also controlled for lower-level variables, such as offspring's frequency of support for each parent, parental health and education. The multilevel model equation for hypothesis 1 is listed below.

$$\text{Offspring stress}_{ij} = b_0 + \boldsymbol{b_{1i}}\ \textbf{(Offspring obligation)} + b_{2i}\,(\text{Offspring depression}) + b_{3i}\,(\text{Offspring gender}) + b_{4i}\,(\text{Offspring minority}) + b_{5ij}\,(\text{Offspring support}) + b_{6ij}\,(\text{Parent health}) + b_{7ij}\,(\text{Parent education}) + u_i + e_{ij}$$

In this model, *i* represents the upper family/offspring level and *j* refers to the lower parent level. Offspring stress_{ij} is the stress offspring *i* felt when helping their parent *j*; b_0 represents the intercept which is the predicted value of offspring stress when all of the predictors equal zero; b_{1i} represents the strength of association between offspring's sense of filial obligation and stress. Coefficients of upper-level controls for offspring *i* are b_{2i} to b_{4i}; coefficients of lower-level control variables for parent *j* of offspring *i* were b_{5ij} and b_{7ij}. Regarding variances, u_i is the between family variance while e_{ij} is the within family and random residual variance. The equation for hypothesis 1b was the same as hypothesis 1a except the dependent variable, offspring's feelings of rewards when helping their older parents.

For hypotheses 2a and 2b, I estimated a multilevel model with parental depression as the outcome. The multilevel model was similar to that of hypothesis 1 except that the

predictors were both offspring's stress and rewards of helping each parent. Control variables were also the same as hypothesis 1.

Finally, I examined the potential paths of association among offspring's filial obligation, frequency of support, stress and rewards about helping parents, and parental depression in a structural equation modeling (SEM) framework. I used Mplus 6 software with TYPE = COMPLEX and CLUSTER function. This analytic procedure estimates standard errors in the nested data structure by accounting for within and between cluster (family) variances (Muthen & Muthen, 2010). Although the missing data for each variable was minimal (< 1%), I used full information maximum likelihood estimation (FIML) to handle missing data. FIML included all available data in the analyses instead of listwise deletion (Arbuckle, 1996; Schafer & Graham, 2002). The model fit indices included the standard goodness-of-fit criteria, such as the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and root mean square residual (SRMR; Klem, 2000).

In the SEM path model, I mainly tested two sets of direct paths and two sets of indirect effects (See Figure 1). The direct paths were (a) offspring's filial obligation may be associated with their feelings of more stress and fewer rewards, and (b) Offspring's more stress and fewer rewards may be associated with more parental depression. The first set of indirect effects indicated that offspring's stronger filial obligation may be associated with more frequent support to older parents, which in turn may be associated with offspring experiencing more stress and fewer rewards. The second set of indirect

effects indicated that offspring's more support to their parents may be associated with offspring's more stress and fewer rewards in helping parents. Then, the appraisals of support (more stress and fewer rewards) may be associated with more parental depression. Control variables included offspring's depression, gender, minority status, parental health, and education. Offspring's support, appraisals and parental depression were regressed on the control variables.

Results

I first examined the descriptive statistics for the variables in the analyses (Table 10) and bivariate associations (Table 11). Based on the distributions of variables, I proceeded to hypothesis testing.

OFFSPRING'S OBLIGATION TO SUPPORT OLDER PARENTS

Hypothesis 1a pertained to the association between offspring's stronger sense of filial obligation and feelings of stress when helping their older parents. Findings from the multilevel model indicated that offspring's stronger sense of filial obligation was associated with less stress when helping their older parents (Table 12).

Hypothesis 1b anticipated that offspring's sense filial obligation would be associated with their feelings of rewards when helping their parents. As shown in Table 12, offspring's stronger sense of filial obligation was associated with more rewarding feelings when helping their older parents.

OFFSPRING'S APPRAISALS OF SUPPORT

Regarding hypothesis 2a and 2b, I expected that offspring's appraisals of support would be associated with parental depression. The multilevel shown in Table 13 indicated that when offspring experience stress in helping their parents, the parents were more depressed. Offspring's feelings of rewards were not significantly associated with their parental depression, however.

FILIAL OBLIGATION, APPRAISALS OF SUPPORT, AND PARENTAL WELL-BEING

I also examined the path model among offspring's filial obligation, appraisals of support, and parental depression. The path statistics are shown in Table 14 and illustrated in Figure 2. The direct effects of the path models are similar to the multilevel models; adult offspring with a stronger sense of filial obligation reported less stress and more rewards when helping their older parents. In turn, offspring's greater stress was associated with more parental depression.

This study also included offspring's frequency of support in the path analyses, however. As shown in Table 14 and Figure 2, offspring's stronger sense of filial obligation was associated with more frequent support to their parents. Greater amount of support was further associated with offspring's higher levels of stress when helping their parents. This finding was in the opposite direction of the direct effect between filial obligation and stress, but nonetheless showed a significant indirect effect between filial obligation and filial stress in helping (See Table 15 and Figure 2). Because the direct effect between offspring's filial obligation and stress was still significant, offspring's frequency of support only partially mediated the association between offspring's filial

obligation and stress. Furthermore, offspring's stress also mediated the association between offspring's frequency of support and parental depression. Namely, adult offspring who provided more frequent support felt more stress when helping their parents. More stress was further associated with parental depression.

POST HOC ANALYSES

This study included alternative models to test different sequences of variables in the proposed model. I used model fit indicators X^2, RMSEA, SRMR, and CFI to determine which models fit the data better (Wu & Kim, 2009; Klein, 2004). In alternative models, parental depression was a predictor, and the sequence of other elements were switched. Alternative model 1 and 2 treated parental depression as the first predictor in the model and offspring's filial obligation as the final dependent variable (See Appendix Figure 2 and 3). The Model fit index of alternative model 1 ($X^2(9)$ = 33.43, p < .001, RMSEA = .12, SRMR = .05, CFI = 0.80) and alternative model 2 ($X^2(9)$ = 33.43, p < .001, RMSEA = .12, SRMR = .05, CFI = 0.80) were worse than the proposed model of this study ($X^2(9)$ = 9.73, p > .05, RMSEA = .02, SRMR = .03, CFI = 0.99; See Figure 2). Alternative model 3 and 4 treated parental depression as the first predictor. Offspring's filial obligation was the mediator between offspring's appraisals and frequency of support (See Appendix Figure 4 and 5). Similarly, model fit index of both alternative model 3 ($X^2(9)$ = 27.79, p < .001, RMSEA = .10, SRMR = .05, CFI = 0.85) and model 4 ($X^2(9)$ = 33.74, p < .001, RMSEA = .11, SRMR = .05, CFI = 0.80) were also worse than the proposed model of this study.

Discussion

This study contributes to the understanding of intergenerational support by linking both adult offspring's sense of obligation and appraisals of support with parental well-being. Research regarding caregiving has documented the association between support providers' burden and their own well-being (Pinquart & Sörensen, 2003, 2005; Zarit et al., 2010). Research about everyday support usually have investigated support receivers' well-being (Thoits, 2011; Uchino, 2009). This study connected both support providers' and receivers' reports, and found that offspring's feelings of stress was associated with parental depression. Adult offspring's feelings about helping their parents may have implications to their parents' well-being. Consistent with other interpersonal contexts, the manner in which the support is delivered is also crucial to support receivers' outcomes (Gleason, Iida, Shrout, & Bolger, 2008; Rafaeli & Gleason, 2009).

OFFSPRING'S OBLIGATION TO SUPPORT OLDER PARENTS

The findings from both the multilevel models and path models indicated that a stronger sense of filial obligation was associated with offspring's positive appraisals. Adult offspring with a stronger sense of filial obligation felt less stressful and more rewarding when helping their older parents. The commitment framework suggests that morally committed to relationships is associated with positive experiences (Johnson, 1999; Weigel et al., 2014). Solidarity theory maintains that offspring's sense of filial obligation may reflect affection and positive regard (Bengtson et al., 2002). Therefore,

beliefs that families should help one another are associated with feelings of reward (Ganong & Coleman, 2006; Walker, Pratt, Shin, & Jones, 1990).

The findings also suggest contextual differences between caregiving and everyday support. Literature regarding caregiving burden has found that offspring's stronger sense of filial obligation was associated with more caregiving burden (Cicirelli, 1993; Losada et al., 2010; Rozario & DeRienzis, 2008). Caregiving may place so many demands on the offspring that makes the situation stressful (Pinquart & Sörensen, 2003; Zarit et al., 2010). However, this study focused on everyday support where the loading of support is relatively low.

OFFSPRING'S APPRAISALS OF SUPPORT

Offspring's stress when helping their older parents may be a risk factor for the parents who receive the support. Research has documented that between couples, the manner in which social support is provided affects the well-being of support receivers (Gleason et al., 2008; Rafaeli & Gleason, 2009). However, literature regarding caregiving usually has focused on offspring caregivers' own burden and outcomes (Pinquart & Sörensen, 2005; Zarit et al., 2010). This study further suggests that feelings of stress when helping older parents in everyday contexts contributed to parental depression.

FILIAL OBLIGATION, APPRAISALS OF SUPPORT, AND PARENTAL WELL-BEING

This study integrated offspring's frequency of support in the path model and found two different paths between adult offspring's filial obligation and stress in helping their parents. A stronger sense of filial obligation was associated with offspring's less

stress. On the other hand, stronger filial belief led to more frequent support, which was associated with offspring's more stress (See Figure 2). For support receivers, perceived support usually links to positive outcomes while actually receiving support may be associated with worse well-being (Rafaeli & Gleason, 2009; Thoits, 2011). Similarly, for support providers, a sense of filial obligation itself may function as a perception and lead to positive feelings. When filial obligation is enacted into actual support, however, may make offspring feel stressful.

The discrepant findings may also suggest possible third factors. Factors such as parental health problems or widowhood that elicit support may contribute to the offspring's stress as well (Eggebeen & Davey, 1998; Ha, Hong, Seltzer, & Greenberg, 2008). Future research should seek to explain the discrepant findings regarding direct and indirect paths of association between filial obligation and offspring stress.

LIMITATIONS AND FUTURE DIRECTIONS

The main limitation of this study is about the cross-sectional nature of the data. Both adult offspring's and their parents' reports were measured at the same wave. It is unclear whether offspring's feelings about helping their parents precede parental well-being. Older adults who are more depressed may induce their adult offspring's perceived obligation to provide care, frequency of support, and feelings of stress. Although post hoc analyses suggested that the proposed model in this study fit the data better than other alternative models, longitudinal data may still be necessary for causal inferences.

Older parents in this study generally reported low levels of depression. Older parents who suffered from severe depression symptoms may be unable to participate in the survey. Because the range of parental depression was small, it may be difficult to detect significant findings. However, given the small variability of parental depression, this study sill found that offspring's stress was associated with parental depression. This finding suggested a strong association of offspring's stress and parental depression among healthy older parents.

In summary, the way through which adult offspring deliver the support to their older parents requires attention because it is associated with their parents' psychological well-being. If adult offspring feel stressful to help their parents, the parents may not actually benefit from the support received. To be worse, the parents may even feel more depressed after receiving the support. Future studies regarding intergenerational support may consider both support providers' and receivers' appraisals about support.

Table 1.

Background Characteristics of Grandparents (G1), Parents, (G2), and Adult Offspring (G3).

Variable	G1 grandparents (n = 159)			G2 parents (n = 159)			G3 adult offspring (n = 294)		
	M	*SD*	Range	*M*	*SD*	Range	*M*	*SD*	Range
Age	80.18	5.86	63-95	54.90	4.56	45-65	27.36	5.87	18-59
Years of education	12.46	2.61	7-17	14.45	1.91	12-17	13.64	1.86	8-17
Household income[a]	3.12	1.61	1-12	6.64	2.71	1-12	5.11	2.73	1-12
Self-reported health[b]	2.99	1.06	1-5	3.39	0.94	1-5	3.53	1.05	1-5
Frequency of support to parents[c]	-	-	-	4.34	1.33	1-8	4.19	1.57	1-8
Filial obligation[d]	3.57	0.64	1-5	3.89	0.51	1-5	3.72	0.57	1-5
				Proportions					
Women		.79			.62			.54	
Black		-			.31			-	
Married		.32			.60			.25	

[a]Household income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [b]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [c]Frequency of support: mean scores of six items rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [d]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.*

Table 2.

Correlations for Study Variables of G1 (n = 159), G2 (n = 159), and G3 (n = 294).

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. G1 obligation[a]	-												
2. G2 obligation[a]	.27**	-											
3. G3 obligation[a]	-.05	.11	-										
4. G1 gender[b]	-.03	-.14	.06	-									
5. G2 gender[b]	-.10	-.03	.06	-.10	-								
6. G3 gender[b]	-.06	-.06	-.22**	-.13*	.04	-							
7. Race[c]	.19*	.15	.27**	-.08	-.08	-.08	-						
8. G2 support to G1[d]	.21**	.33**	.11	-.21**	-.16**	-.01	.26**	-					
9. G3 support to G2[d]	.11	.04	.24**	.05	-.31**	-.11	.16**	.27**	-				
10. G1 age	.00	-.01	-.12*	.19*	.11	.03	-.25**	-.01	-.09	-			
11. G2 age	-.14	-.03	-.10	-.09	-.04	.11	-.02	.02	-.12	.60**	-		
12. G3 age	-.05	.02	-.05	-.01	-.02	.03	.23**	.11	-.19**	.17**	.43**	-	
13. G1 income[e]	-.13	-.16	-.06	.29*	-.10	-.07	-.19*	-.20*	.03	-.09	-.05	-.10	-
14. G2 income[e]	-.08	-.23**	-.11	.07	-.02	-.01	-.48**	-.23*	-.13*	.16	-.02	-.25**	.18*
15. G1 health[f]	-.11	.01	.01	-.06	.12	-.00	-.22**	-.07	-.00	-.01	-.06	-.06	.09
16. G2 health[f]	.03	.08	-.02	.06	.04	.03	-.19*	-.18*	-.19*	.16*	.01	-.13*	.00
17. G1 married	-.11	-.12	-.05	.17*	.12	.03	-.23	-.37**	-.15*	-.12	-.12	-.11	.42**
18. G2 married	-.14	-.10	-.07	-.04	-.01	.00	-.40	-.03	.12*	.08	.08	-.11	.02

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [b]Gender: 0 = *women*, 1 = *men*. [c]Race: 0 = *non-Hispanic White*, 1 = *Black*. [d]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 =

$*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

* $p < .05$. ** $p < .01$.

Correlations for Study Variables of G1 (n = 159), G2 (n = 159), and G3 (n = 294) Cont.

Variables	14.	15.	16.	17.
1. G1 obligation[a]				
2. G2 obligation[a]				
3. G3 obligation[a]				
4. G1 gender[b]				
5. G2 gender[b]				
6. G3 gender[b]				
7. Race[c]				
8. G2 support to G1[d]				
9. G3 support to G2[d]				
10. G1 age				
11. G2 age				
12. G3 age				
13. G1 income[e]				
14. G2 income[e]	-			
15. G1 health[f]	.18*	-		
16. G2 health[f]	.29**	.14	-	
17. G1 married	.10	.08	.05	-
18. G2 married	.37**	.14	-.03	.15

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Gender: 0 = *women*, 1 = *men*. [c]Race: 0 = *non-Hispanic White*, 1 = *Black*. [d]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

* $p < .05$. ** $p < .01$.

Table 3.

Ordinary Least Squares Regression (n = 159) Predicting Parents' (G2) Filial Obligation from Grandparents' (G1) Filial Obligation.

	G1 predicting G2	
Predictors	*β*	*SE*
Intercept	6.38	5.26
G1 obligation[a]	.18**	.07
Control variables		
Race[b]	-.00	.09
Mother-daughter ties[c]	.05	.09
G2 age	-.14	.19
G2 age[2]	.00	.00
G1 income[d]	-.03	.03
G1 health[e]	.04	.04
G1 married	.06	.10
G2 support to G1[f]	.12***	.03
F	3.38***	
Adjusted R^2	.13	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [c]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [d]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [e]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [f]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4.

Multilevel Models (n = 249) Predicting Offspring's (G3) Filial Obligation from Parents' (G2) and Grandparents' (G1) Filial Obligation.

	G2 predicting G3		G1 and G2 predicting G3	
Predictors	*β*	*SE*	*B*	*SE*
Intercept	3.18***	.63	3.30***	.62
G1 obligation[a]	-	-	-.10	.05
G2 obligation[a]	.10	.07	.12	.07
Control variables				
Race[b]	.30***	.09	.31***	.09
Grandmother-granddaughter ties[c]	-	-	.13	.08
Mother-daughter ties[d]	.02	.07	-.03	.08
G3 age	-.01	.03	-.01	.03
G3 age^2	.00	.00	.00	.00
G2 income[e]	-.01	.02	.00	.01
G2 health[f]	.02	.04	.03	.04
G2 married	-.09	.08	-.01	.08
G3 support to G2[g]	.08***	.02	.08**	.02
Intercept variance	.00	.03	-	-
Residual variance	.29***	.04	.28***	.02
-2 log likelihood	444.0		436.0	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [c]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [c]Grandmother-grandaughter ties: 0 = *other ties*, 1 = grand*mother-granddaughter ties*. [d]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [g]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 5.

Multilevel Models (n = 249) Predicting Grandchildren's (G3) Filial Obligation from Parental (G2) Support for Grandparents (G1).

	Mean Support		Emotional		Practical		Listening		Socializing		Advice		Financial	
Predictors	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*
Intercept	3.18***	.63	4.53***	.87	4.14***	.83	3.74***	.88	2.22**	.67	3.50***	.80	5.26***	.71
G2 obligation[a]	.09	.07	.06	.08	-.09	.07	.09	.08	.09	.06	.16*	.06	.01	.05
G2 support to G1[b]	.01	.03	-.01	.03	.02	.03	.01	.03	.05*	.02	-.01	.02	-.02	.04
Control variables														
Race[c]	.29**	.09	.17	.13	-.23	.13	.35**	.13	.26*	.10	.46***	.13	.11	.12
Mother-daughter ties[d]	.03	.07	.21*	.11	-.14	.10	.16	.10	.21*	.08	-.04	.10	-.06	.09
G3 age	-.01	.03	-.06	.05	-.06	.05	-.02	.05	.01	.04	-.03	.04	-.16***	.04
G3 age^2	.00	.00	.00	.00	.00	.00	.00	.00	-.00	.00	.00	.00	.00***	.00
G2 income[c]	-.00	.02	.02	.02	.00	.02	.05	.02	.02	.02	.03	.02	-.02	.02
G2 health[d]	.03	.04	-.06	.06	.02	.05	.00	.05	.08	.04	-.05	.05	-.03	.05
G2 married	.00	.08	-.11	.12	-.11	.11	.18	.11	.04	.09	-.10	.11	-.20*	.10
G3 support to G2[b]	.07**	.02	.06*	.04	.09**	.03	-.03	.04	.02	.03	.07*	.03	.10**	.03
Intercept variance	.00	.03	.05	.06	-	-	-	-	.00	.03	.04	.05	.05	.04
Residual variance	.29***	.04	.57***	.07	.56***	.05	.60***	.05	.35***	.04	.49***	.06	.38***	.05
-2 log likelihood	440.1		647.9		623.8		633.9		496.7		597.4		543.9	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [c]Race: 0 = *Non-Hispanic White*, 1 = *Black.* [d]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 =

$25,001-$40,000, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 6.

Ordinary Least Squares Regression (n = 159) Predicting Parents' (G2) Sense of Filial Obligation with Race as a Moderator.

	G1 predicting G2	
Predictors	*β*	*SE*
Intercept	6.91	5.33
G1 obligation[a]	.19*	.08
Race[b]	-.00	.10
Interaction		
Race*G1 obligation	-.02	.14
Control variables		
Mother-daughter ties[c]	.05	.09
G2 age	-.13	.20
G2 age^2	.00	.00
G1 income[d]	-.03	.03
G1 health[e]	.04	.04
G1 married	.06	.10
G2 support to G1[f]	.12***	.03
F	3.02**	
Adjusted R^2	.12	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [c]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [d]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [e]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [f]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7.

Multilevel Models (n = 294) Predicting Offspring's (G3) Sense of Filial Obligation with Race as a Moderator.

	G2 predicting G3		G1 and G2 predicting G3	
Predictors	*β*	*SE*	*β*	*SE*
Intercept	3.56***	.56	3.41***	.55
G1 obligation[a]	-	-	-.11	.07
G2 obligation[a]	.10	.08	.11	.08
Race[b]	.30***	.09	.31***	.09
Interactions				
Race*G1 obligation	-	-	.03	.10
Race*G2 obligation	-.00	.14	.02	.14
Control variables				
Grandmother-granddaughter ties[c]	-	-	.13	.08
Mother-daughter ties[d]	.02	.07	-.03	.08
G3 age	-.01	.03	-.01	.03
G3 age^2	.00	.00	.00	.00
G2 income[e]	-.00	.02	.00	.01
G2 health[f]	.02	.04	.03	.04
G2 married	.00	.08	-.01	.08
G3 support to G2[g]	.07**	.02	.08**	.02
Intercept variance	.00	.03	-	-
Residual variance	.29***	.04	.28***	.02
-2 log likelihood	444.0		435.9	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [b]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [c]Grandmother-grandaughter ties: 0 = *other ties*, 1 = grand*mother-granddaughter ties*. [d]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [g]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 8.

Ordinary Least Squares Regression (n = 159) Predicting Parents' (G2) Sense of Filial Obligation with Gender as a Moderator.

	G1 predicting G2	
Predictors	*β*	*SE*
Intercept	6.32	5.32
G1 obligation[a]	.13	.08
Mother-daughter ties[b]	-.00	.08
Interaction		
Mother-daughter*G1 obligation	.13	.13
Control variables		
Race[c]	.01	.10
G2 age	-.11	.20
G2 age^2	.00	.00
G1 income[d]	-.03	.03
G1 health[e]	.04	.04
G1 married	.06	.10
G2 support to G1[f]	.11**	.03
F	3.08**	
Adjusted R^2	.12	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [c]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [d]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [e]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [f]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 9.

Multilevel Models (n = 294) Predicting Offspring's (G3) Sense of Filial Obligation with Gender as a Moderator.

	G2 predicting G3		G1 and G2 predicting G3	
Predictors	*β*	*SE*	*β*	*SE*
Intercept	3.55***	.56	3.40***	.55
G1 obligation[a]	-	-	-.02	.06
G2 obligation[a]	.07	.08	.06	.08
Grandmother-granddaughter ties[b]	-	-	.13	.08
Mother-daughter ties[c]	-.39	.56	-.76	.57
Interactions				
Grandmother-granddaughter*G1 obligation	-	-	-.21	.10
Mother-daughter*G2 obligation	.11	.14	.18	.14
Control variables				
Race[d]	.30**	.09	.30***	.09
G3 age	-.01	.03	-.01	.03
G3 age^2	.00	.00	.00	.00
G2 income[e]	-.00	.02	.00	.01
G2 health[f]	.03	.04	.03	.04
G2 married	.00	.08	-.02	.08
G3 support to G2[g]	.07**	.02	.07**	.02
Intercept variance	.00	.03	-	-
Residual variance	.28***	.04	.27***	.02
-2 log likelihood	443.5		431.2	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Grandmother-grandaughter ties: 0 = *other ties*, 1 = grand*mother-granddaughter ties*. [c]Mother-daughter ties: 0 = *other ties*, 1 = *mother-daughter ties*. [d]Race: 0 = *Non-Hispanic White*, 1 = *Black.* [e]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [g]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 10.

Background Characteristics of Adult Offspring (n = 189) and Their Older Parents (n = 221).

Variable	Adult Offspring (*n* = 189)			Parents (*n* = 221)		
	M	*SD*	Range	*M*	*SD*	Range
Age	54.68	4.55	45-65	80.17	5.99	63-95
Years of education	14.88	1.95	12-17	12.89	2.87	7-17
Household income[a]	6.49	2.83	1-12		-	
Filial obligation[b]	3.90	0.51	1-5		-	
Stressful about helping parents[c]	2.15	1.19	1-5		-	
Rewarding about helping parents[c]	4.29	0.88	1-5		-	
Amount of support for parents[d]	4.18	1.32	1-8		-	
Self-reported depression[e]	1.44	0.92	1-5	1.58	0.64	1-5
Self-rated health[f]	3.35	0.95	1-5	2.89	1.28	1-5
			Proportions			
Women		.60			.72	
Minority		.33			-	
Married		.71			.40	

[a]Household income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [b]Filial obligation: means score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [c]Stressful and rewarding about helping parents: 1 = *not at all*, 2 = *a little*, 3 = *somewhat*, 4 = *quite a bit*, 5 = *a great deal*. [d]Amount of support for parents: mean scores of six items rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [e]Self-reported depression: mean scores of five items rated 1 = *not at all*, 2 = *a little bit*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*. [f]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

Table 11.

Correlations for Study Variables (n = 221)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Offspring filial obligation[a]	-								
2. Offspring stress[b]	-.12	-							
3. Offspring reward[b]	.32**	-.31**	-						
4. Parent depression[c]	.02	.23**	-.12	-					
5. Offspring depression[c]	.05	.13	-.02	.07	-				
6. Offspring support to parents[d]	.32***	.12	.20**	-.08	-.04	-			
7. Offspring gender[e]	-.12	-.10	-.03	-.06	.01	-.18**	-		
8. Offspring minority	.14*	-.07	.12	-.07	-.00	.27***	-.05	-	
9. Parent health[f]	.00	-.16*	.06	-.29**	.02	-.09	.01	-.15*	-
10. Parent years of education	-.08	.03	-.05	-.01	-.15*	-.13	-.02	-.17*	.10

[a]Offspring filial obligation: means score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [b]Offspring stress and reward about helping parents: 1 = *not at all*, 2 = *a little*, 3 = *somewhat*, 4 = *quite a bit*, 5 = *a great deal*. [c]Self-reported depression : mean scores of five items rated 1 = *not at all*, 2 = *a little bit*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*. [d]Offspring support to parents: mean scores of six items rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [e]Offspring gender: 0 = *women*, 1 = *men*. [f]Parent health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12.

Multilevel Models (n = 221) Predicting Offspring Stress and Reward when Helping Their Parents.

	Offspring stress		Offspring reward	
Predictors	*β*	*SE*	*β*	*SE*
Intercept	2.79***	.83	1.82**	.66
Offspring filial obligation[a]	-.41*	.16	.51***	.13
Control variables				
Offspring support to parents[b]	.16*	.06	.07	.05
Offspring depression[c]	.31**	.11	-.06	.09
Offspring minority	-.28	.18	.15	.14
Offspring gender[d]	-.19	.16	.05	.13
Parent health[e]	-.15*	.07	.07	.06
Parent years of education	.03	.03	-.00	.03
Intercept variance	.42*	.20	.22*	.11
Residual variance	.76***	.19	.54***	.11
-2 log likelihood	645.2		550.2	

[a]Offspring filial obligation: means score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [b]Offspring support to parents: mean scores of six items rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [c]Offspring depression : mean scores of five items rated 1 = *not at all*, 2 = *a little bit*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*. [d]Offspring gender: 0 = *women*, 1 = *men*. [e]Parent health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

Table 13.

Multilevel Models (n = 221) Predicting Parental Depression.

	Parent depression	
Predictors	*β*	*SE*
Intercept	2.08***	.39
Offspring stress[a]	.10*	.04
Offspring reward[a]	-.00	.05
Control variables		
Offspring support to parents[b]	-.06	.03
Offspring depression[c]	.04	.06
Offspring minority	-.10	.09
Offspring gender[d]	-.12	.09
Parent health[e]	-.17***	.04
Parent years of education	.00	.02
Intercept variance	.12*	.05
Residual variance	.23***	.05
-2 log likelihood	387.9	

[a]Offspring stress and reward about helping parents: 1 = *not at all*, 2 = *a little*, 3 = *somewhat*, 4 = *quite a bit*, 5 = *a great deal*. [b]Offspring support to parents: mean scores of six items rated: 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*. [c]Offspring depression : mean scores of five items rated 1 = *not at all*, 2 = *a little bit*, 3 = *moderately*, 4 = *quite a bit*, 5 = *extremely*. [d]Offspring gender: 0 = *women*, 1 = *men*. [e]Parent health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*.

Table 14.

Path Statistics of the Estimated Model (n = 221).

Path	*β*	*SE*
Main study variables		
Filial obligation→Offspring stress	-.18*	.07
Filial obligation→Offspring reward	.28***	.07
Filial obligation→Offspring support	.28***	.07
Offspring support→Offspring stress	.19**	.07
Offspring support→Offspring reward	.10	.09
Offspring stress→Parental depression	.20**	.07
Offspring reward→Parental depression	-.04	.06

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 15.

Indirect Effects of the Estimated Model (n = 221).

Path	Estimate of indirect effects		
	Indirect	Direct	Total
Filial obligation→Offspring support→Offspring stress	.05*	-.18*	-.13
Filial obligation→Offspring support→Offspring reward	.03	.28***	.31***
Offspring support→Offspring stress→Parent depression	.04*	-.11	-.08
Offspring support→Offspring reward→Parent depression	-.00	-.11	-.08

* $p < .05$. ** $p < .01$. *** $p < .001$.

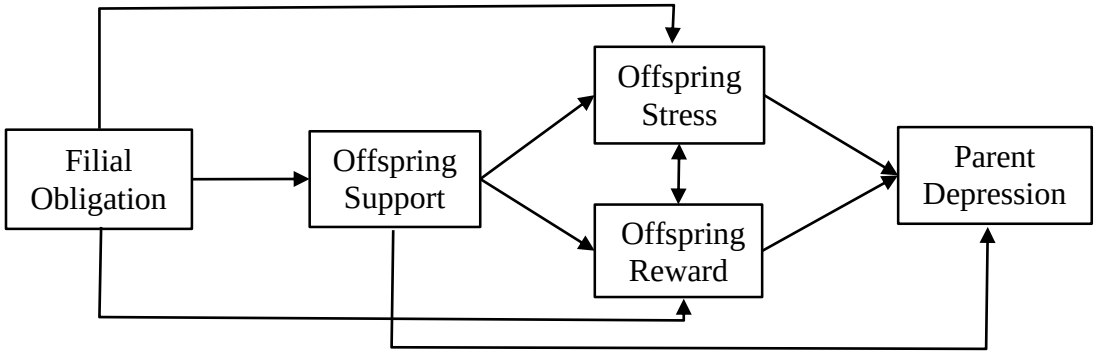


Figure 1. Theoretical Model.

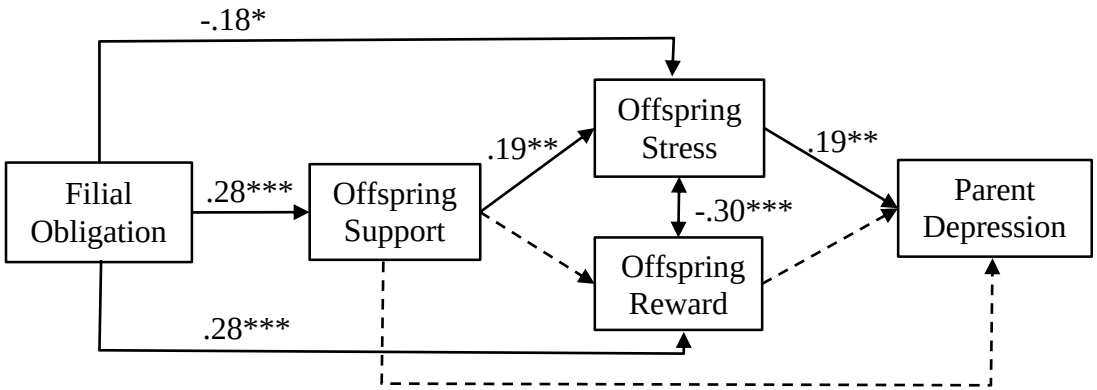


Figure 2. Estimated Model.

Note. Coefficients shown with solid lines are significant standardized path coefficients after accounting for the following covariates: offspring depression, minority status, gender, parental health and education. Model Fit for estimated model: $X^2(9) = 9.73$, $p > .05$, RMSEA = .02, SRMR = .03, CFI = 0.99.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix

Appendix Table 1.

Ordinary Least Squares Regressions Predicting Parents' (G2) Sense of Filial Obligation with Rearranged Samples.

	Women dyads (n = 100)		Men dyads (n = 34)		Black dyads (n = 50)		White dyads (n = 112)	
Predictors	β	*SE*	*B*	*SE*	β	*SE*	β	*SE*
Intercept	16.50*	6.32	-13.70	11.85	8.15	8.30	3.17	6.90
G1 obligation[a]	.12	.08	-.03	.13	.18	.13	.00	.08
Control variables								
G2 age	-.50*	.23	.62	.53	-.21	.31	-.00	.25
G2 age^2	.00*	.00	-.01	.00	.00	.00	.00	.00
G1 income[b]	.05	.04	-.02	.06	.06	.06	.02	.03
G1 health[c]	.03	.04	-.02	.09	.04	.09	-.02	.04
G1 married	-.13	.11	-.08	.22	-.05	.23	-.02	.10
G2 support to G1[d]	.16***	.04	.22**	.07	.17**	.06	.17***	.04
F	3.83**		1.54		1.48		3.17**	
Adjusted R^2	.18		.10		.07		.13	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [c]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [d]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*p < .05. **p < .01. ***p < .001.

Appendix Table 2.

Ordinary Least Squares Regressions Predicting Offspring's (G3) Sense of Filial Obligation with Rearranged Samples.

	Women dyads (n = 100)		Men dyads (n = 62)		Black dyads (n = 50)		White dyads (n = 113)	
Predictors	*β*	*SE*	*β*	*SE*	*β*	*SE*	*β*	*SE*
Intercept	2.64*	1.21	2.91**	.98	5.28*	2.14	2.17**	.78
G2 obligation[a]	-.08	.11	-.01	.12	.17	.17	.15	.10
Control variables								
G3 age	.07	.07	.03	.04	-.06	.13	.01	.04
G3 age^2	-.00	.00	-.00	.00	.00	.00	-.00	.00
G2 income[b]	.01	.02	.04	.03	.03	.04	.02	.02
G2 health[c]	.00	.06	-.07	.08	-.24*	.11	.07	.05
G2 married	-.20	.12	-.02	.15	.08	.22	-.14	.11
G3 support to G2[d]	.12**	.04	.04	.04	-.03	.06	.09*	.04
F	1.80		.92		1.33		2.27*	
Adjusted R^2	.06		.00		.05		.08	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [c]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [d]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

Appendix Table 3.

Ordinary Least Squares Regressions (n = 159) Predicting Parents' (G2) Sense of Filial Obligation with Mother-Son, Father-Son, and Father-Daughter Ties as Moderators.

	Mother-son		Father-son		Father-daughter	
Predictors	*β*	*SE*	*β*	*SE*	*β*	*SE*
Intercept	6.96	5.30	6.89	5.29	6.10	5.31
G1 obligation[a]	.18*	.08	.17*	.07	.22**	.07
Mother-son ties[b]	.05	.09	-	-	-	-
Father-son ties[c]	-	-	-.08	.17	-	-
Father-daughter[d]	-	-	-	-	-.04	.12
Interactions						
Mother-son*G1 obligation	-.02	.14	-	-	-	-
Father-son*G1 obligation	-	-	.06	.24	-	-
Mother-daughter*G1 obligation	-	-	-	-	-.21	.16
Control variables						
Race[e]	-.00	.10	-.00	.10	.01	.09
G2 age	-.13	.19	-.13	.19	-.10	.19
G2 age^2	.00	.00	.00	.00	.00	.00
G1 income[f]	-.03	.03	-.03	.03	-.03	.03
G1 health[g]	.04	.04	.04	.04	.04	.04
G1 married	.06	.10	.07	.10	.05	.10
G2 support to G1[h]	.12***	.03	.12***	.03	.11***	.03
F	3.02**		3.02**		3.20**	
Adjusted R^2	.12		.12		.13	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always*. [b]Mother-son ties: 0 = *other ties*, 1 = *mother-son ties*. [c]Father-son ties: 0 = *other ties*, 1 = *father-son ties.* [d]Father-daughter ties: 0 = *other ties*, 1 = *father-daughter ties.* [e]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [f]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [g]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [h]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.

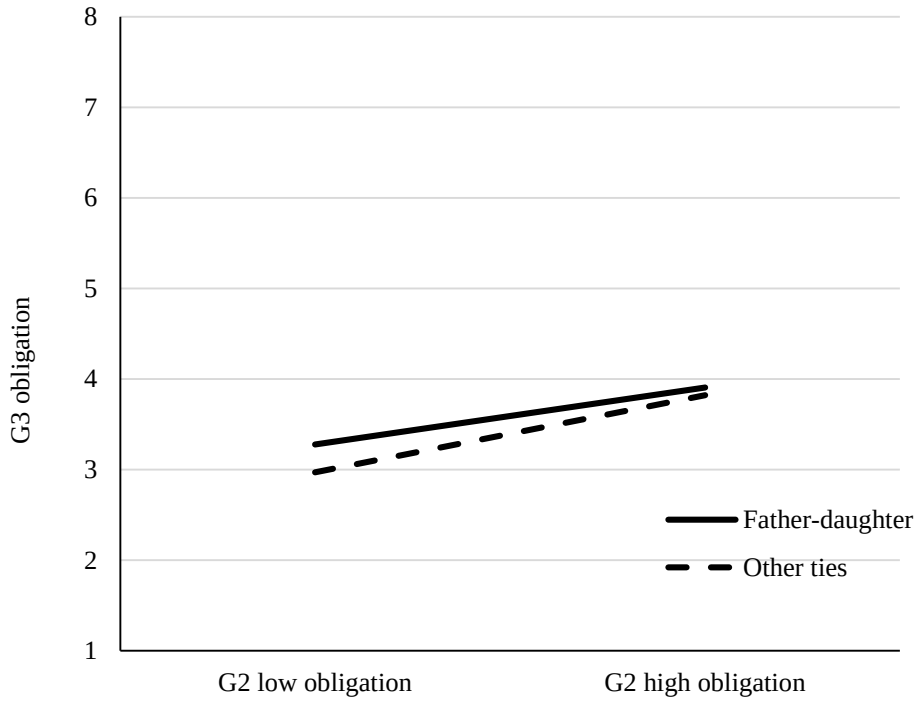
Appendix Table 4.

Multilevel Models (n = 294) Predicting Offspring's (G3) Sense of Filial Obligation with Mother-Son, Father-Son, and Father-Daughter Ties as Moderators.

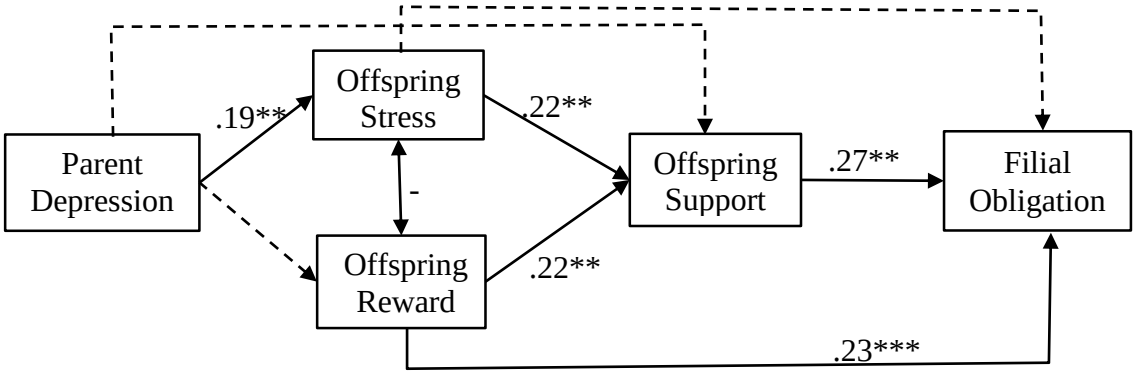
	Mother-son		Father-son		Father-daughter	
Predictors	*β*	*SE*	*β*	*SE*	*β*	*SE*
Intercept	3.49***	.54	3.56***	.57	3.32***	.54
G2 obligation[a]	.13	.07	.10	.07	.10	.06
Mother-son ties[b]	.17	.36	-	-	-	-
Father-son ties[c]	-	-	.10	.40	-	-
Father-daughter ties[d]	-	-	-	-	1.19**	.37
Interactions						
Mother-son*G2 obligation	-.11	.10	-	-	-	-
Father-son*G2 obligation	-	-	-.03	.11	-	-
Father-daughter*G2 obligation	-	-	-	-	-.27*	.11
Control variables						
Race[e]	.28**	.09	.31***	.09	.31***	.09
G3 age	-.01	.03	-.01	.03	-.01	.03
G3 age^2	-.00	.00	.00	.00	.00	.00
G2 income[f]	-.00	.01	-.00	.02	.00	.01
G2 health[g]	.02	.04	.02	.04	.02	.04
G2 married	-.01	.08	-.00	.08	-.00	.08
G3 support to G2[h]	.07**	.02	.07**	.02	.08***	.02
Intercept variance	-	-	.00	.03	-	-
Residual variance	.28***	.02	.29***	.04	.27***	.02
-2 log likelihood	435.0		444.1		428.5	

[a]Filial obligation: mean score of six items rated 1 = *never*, 2 = *rarely*, 3 = *sometimes*, 4 = *often*, 5 = *always.* [b]Mother-son ties: 0 = *other ties*, 1 = *mother-son ties*. [c]Father-son ties: 0 = *other ties*, 1 = *father-son ties.* [d]Father-daughter ties: 0 = *other ties*, 1 = *father-daughter ties.* [e]Race: 0 = *Non-Hispanic White*, 1 = *Black*. [f]Income: 1 = *less than $10,000*, 2 = *$10,001-$25,000*, 3 = *$25,001-$40,000*, 4 = *$40,001-50,000*, 5 = $*50,001-$60,000*, 6 = $*60,001-$75,000*, 7 = $*75,001-$100,000*, 8 = $*100,001-$125,000*, 9 = $*125,001-$150,000*, 10 = $*150,001-$200,000*, 11 = $*200,001-$250,000*, 12 = $*250,001 or more*. [g]Self-reported health: 1 = *poor*, 2 = *fair*, 3 = *good*, 4 = *very good*, 5 = *excellent*. [h]Frequency of support: mean scores of six items rated 1 = *less than once a year or never*, 2 = *once a year*, 3 = *a few times per year*, 4 = *monthly*, 5 = *a few times a month*, 6 = *weekly*, 7 = *a few times per week*, 8 = *daily*.

*$p < .05$. **$p < .01$. ***$p < .001$.



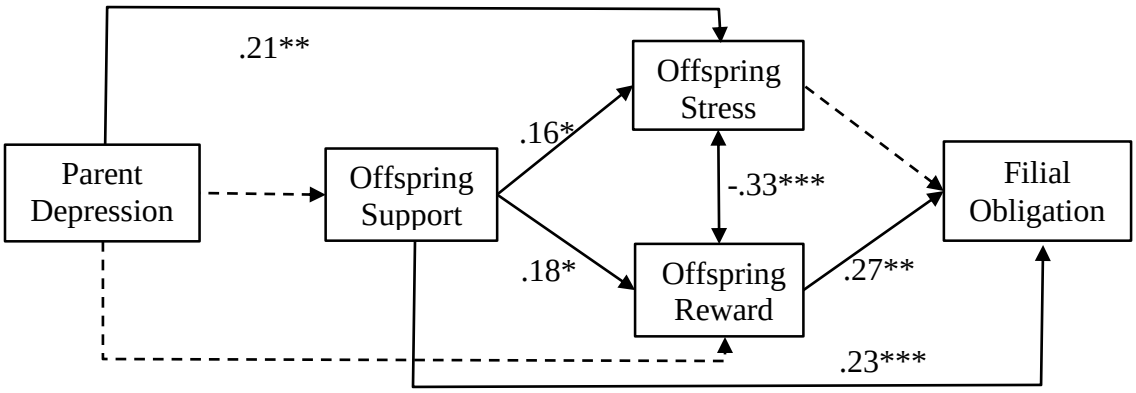
Appendix Figure 1. Association of G2 and G3 Obligation with Father-Daughter Ties as a Moderator.



Appendix Figure 2. Estimated Alternative Model 1.

Note. Coefficients shown with solid lines are significant standardized path coefficients after accounting for the following covariates: offspring depression, minority status, gender, parental health and education. Model Fit for estimated model: $X^2(9) = 33.74$, $p < .001$, RMSEA = .11, SRMR = .05, CFI = 0.80.

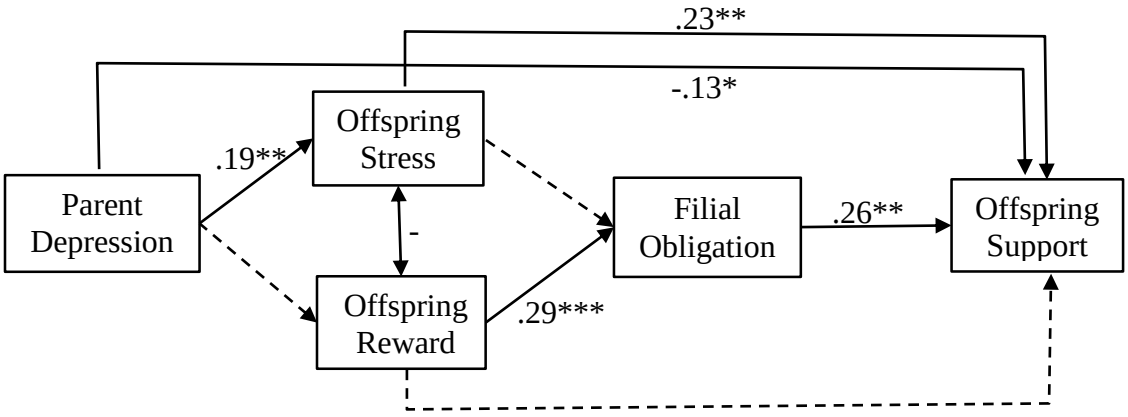
* $p < .05$. ** $p < .01$. *** $p < .001$.



Appendix Figure 3. Estimated Alternative Model 2.

Note. Coefficients shown with solid lines are significant standardized path coefficients after accounting for the following covariates: offspring depression, minority status, gender, parental health and education. Model Fit for estimated model: $X^2(9) = 33.74$, $p < .001$, RMSEA = .11, SRMR = .05, CFI = 0.80.

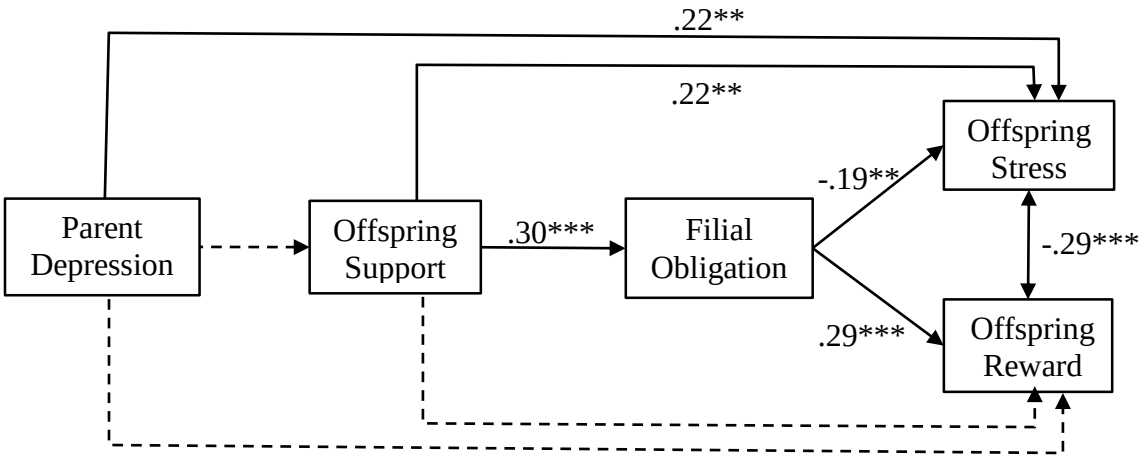
* $p < .05$. ** $p < .01$. *** $p < .001$.



Appendix Figure 4. Estimated Alternative Model 3.

Note. Coefficients shown with solid lines are significant standardized path coefficients after accounting for the following covariates: offspring depression, minority status, gender, parental health and education. Model Fit for estimated model: $X^2(9) = 27.79$, $p < .001$, RMSEA = .10, SRMR = .05, CFI = 0.85.

* $p < .05$. ** $p < .01$. *** $p < .001$.



Appendix Figure 5. Estimated Alternative Model 4.

Note. Coefficients shown with solid lines are significant standardized path coefficients after accounting for the following covariates: offspring depression, minority status, gender, parental health and education. Model Fit for estimated model: $X^2(9) = 33.43$, $p < .001$, RMSEA = .12, SRMR = .05, CFI = 0.80.

* $p < .05$. ** $p < .01$. *** $p < .001$.

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